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ARIZONA MEDICINE

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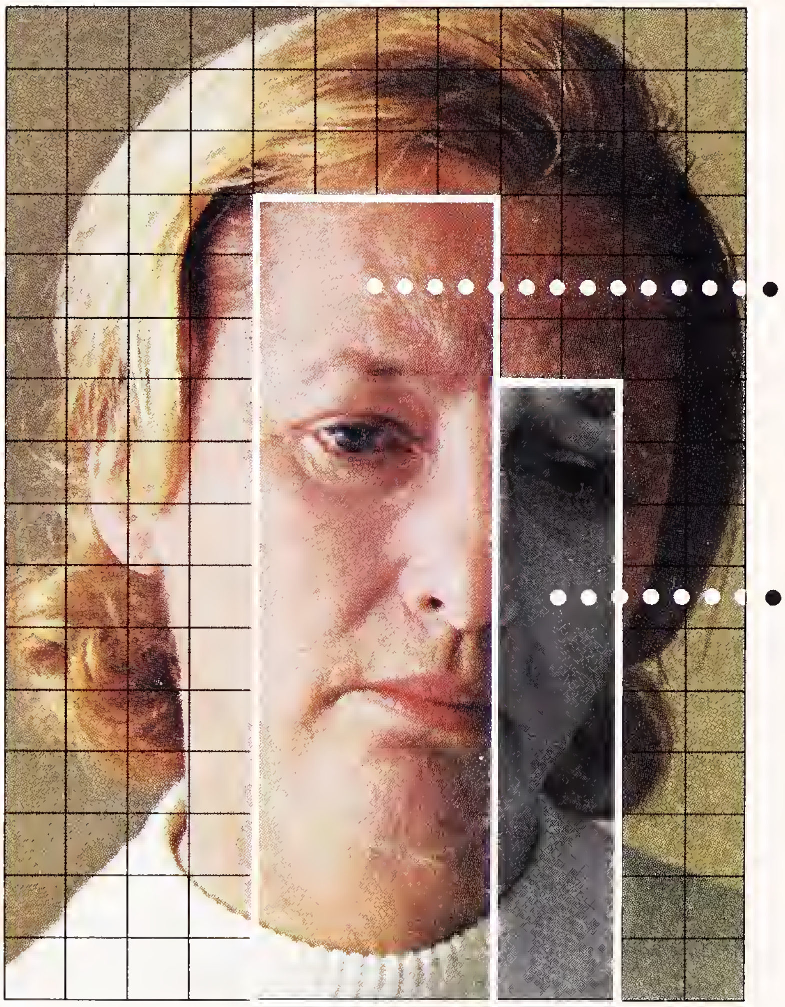

Predominant psychoneurotic anxiety

Associated depressive symptoms

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful

respond to one

According to her major symptoms, she is a psychoneurotic patient with severe anxiety. But according to the description she gives of her feelings, part of the problem may sound like depression. This is because her problem, although primarily one of excessive anxiety, is often accompanied by depressive symptomatology. Valium (diazepam) can provide relief for both—as the excessive anxiety is relieved, the depressive symptoms associated with it are also often relieved.

There are other advantages in using Valium for the management of psychoneurotic anxiety with secondary depressive symptoms: the psychotherapeutic effect of Valium is pronounced and rapid. This means that improvement is usually apparent in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.

Valium®
(diazepam)

2-mg, 5-mg, 10-mg tablets

in psychoneurotic
anxiety states
with associated
depressive symptoms

surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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JANUARY 1975 / VOL. 32, NO. 1

ARIZONA MEDICINE

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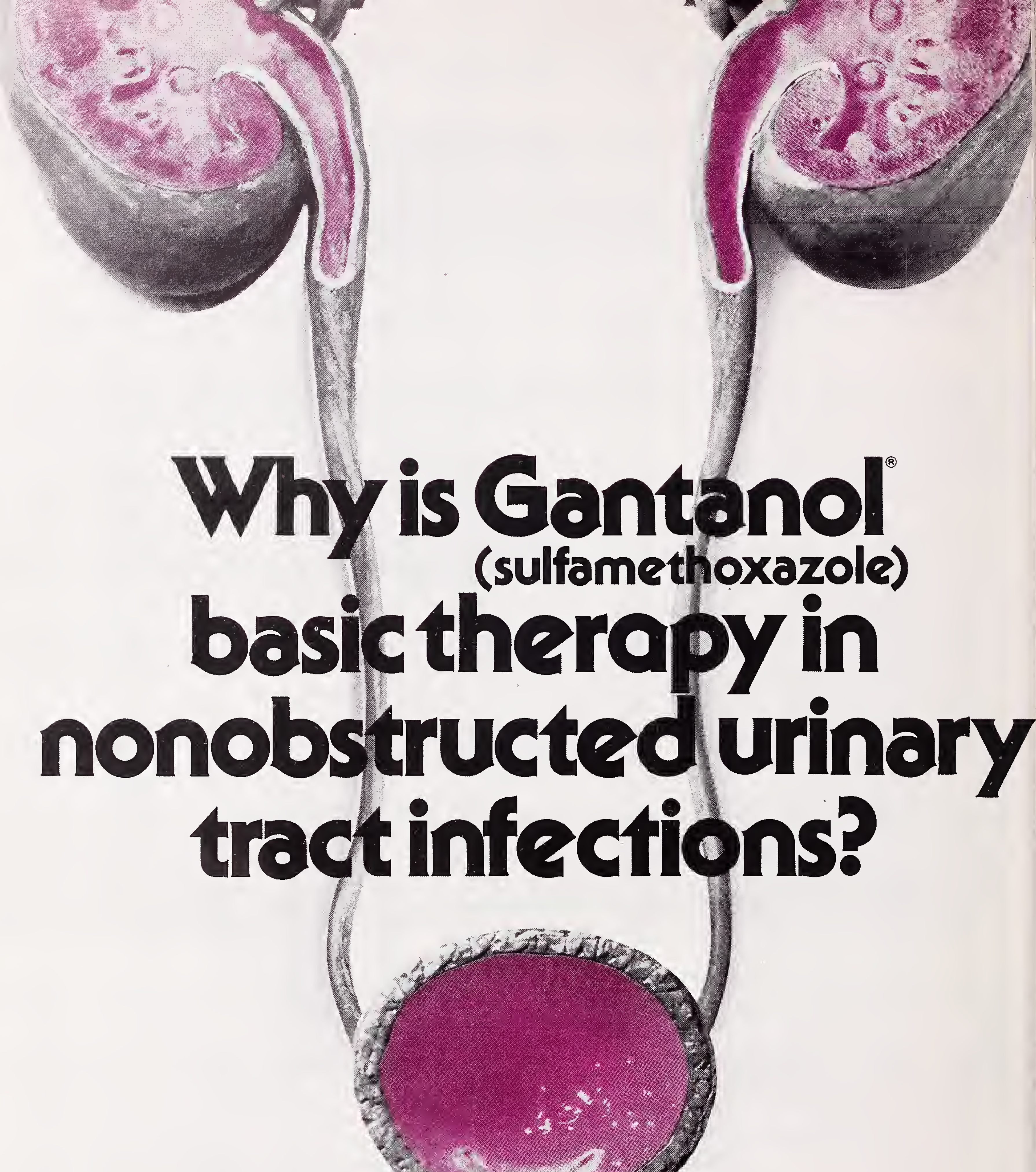

Why is Gantanol® (sulfamethoxazole) basic therapy in nonobstructed urinary tract infections?

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute, recurrent or chronic nonobstructed urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms. **Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides, especially in chronic or recurrent urinary tract infections.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than two months of age.

Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, pur-

Because it is considered a good choice...

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Basic Therapy

Gantanol®

(sulfamethoxazole)

Tablets/Suspension
(0.5 Gm) (0.5 Gm/teasp.)

ura, hypoprothrombinemia and methemoglobinemia); *allergic eactions* (erythema multiforme, skin eruptions, epidermal necroly is, urticaria, serum sickness, pruritus, exfoliative dermatitis, ana hylactoid reactions, periorbital edema, conjunctival and scleral njection, photosensitization, arthralgia and allergic myocarditis); *astrointestinal reactions* (nausea, emesis, abdominal pains, hepa tis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* headache, peripheral neuritis, mental depression, convulsions, taxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous eactions* (drug fever, chills, toxic nephrosis with oliguria and nuria, periarteritis nodosa and L.E. phenomenon). Due to certain hemical similarities with some goitrogens, diuretics (acetazola nide, thiazides) and oral hypoglycemic agents, sulfonamides have aused rare instances of goiter production, diuresis and hypogly emia as well as thyroid malignancies in rats following long-term dministration. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis).

Usual adult dosage: 2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

Usual child's dosage: 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

Supplied: Tablets, 0.5 Gm sulfamethoxazole; Suspension. 0.5 Gm sulfamethoxazole/teaspoonful.

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Opinion & Dialogue

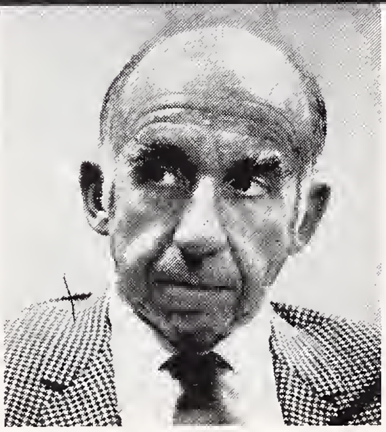
The Role of the Detail Man

Dr. Willard Gobbell
Family Physician
Encino, California

"I may be prejudiced, but I am very much in favor of the detail men I meet. Most of them are knowledge-able about the drugs they promote and can be a great help in acquainting me with new medication."

Family Physician's Perception

I think that most general practitioners in this area feel as I do about the detail man. Over the years I have gotten to know most of the men who visit me regularly and they in turn have become aware of my particular interests and the nature of my practice. They, therefore, limit their discussion as much as possible to the areas of interest to me. Since I usually see the same representative again in future visits, it is in his best interest to supply me with the most honest, factual, as well as up-to-date information about his products.



Dr. Jeremiah Stamler
Chairman
Department of Community Health and Preventive Medicine, and Dingman Professor of Cardiology
Northwestern University Medical School

"In the total picture of dealing with health problems in this countr there is a potential for detail men to play a meaningful role."

The Positive Influence

My contact with representatives and salesmen of the pharmaceutical industry is the type of contact that people in a medical center research people, and academic people have and that's in all likelih on a somewhat different level from that of the practicing physician.

Let me touch on how I personally perceive the role of the sales representative. These men reach large numbers of health professionals. Thus they could be—and at times actually are—disseminators of useful information. They could consistently serve a real educational function in their ability to discuss their products.

At present they do distribute printed material, brochures and pamphlets—some of it scientifically sound and therefore truly useful—as well as some excellent film produced by the pharmaceutical industry. When they function in thi

Is He a Source of Information?

Yes, with certain reservations. The average sales representative has a great fund of information about the drug products he is responsible for. He is usually able to answer most questions fully and intelligently. He can also supply reprints of articles that contain a great deal of information. Here, too, I exercise some caution. I usually accept most of the statements and opinions that I find in the papers and studies which come from the larger teaching facilities. It goes without saying that a physician should also rely on other sources for his information on pharmacology.

Training of Sales Representatives

Ideally, a candidate for the position as a sales representative of a pharmaceutical company should be a graduate pharmacist who has a questioning mind. I don't think this is possible in every case, and so it becomes the responsibility of the pharmaceutical company to train these individuals comprehensively. It is of very great importance that the detail man's knowledge of the product he represents be constantly reviewed as well as updated. This phase of the sales representative's education should be a major responsibility of the medical department of the pharmaceutical company.

I am certain that most of these companies take special care to give their detail men a great deal of information about the products they produce—information about indications, contraindications, side effects and precautions. Yet, although most of the detail men are well informed, some, unfortunately, are not. It might be helpful if sales representatives were reassessed every few years to determine whether or not they are able to fulfill their important function. Incidentally, I feel the same way about periodic assessments of everyone in the health care field, whether they be general practitioners, surgeons or salesmen.

Value of Sampling

I personally am in favor of limited sampling. I do not use sampling in order to perform clinical testing of a drug. I feel that drug testing should rightly be left to the pharmacology researcher and to the large teaching institutions where such testing can be done in a controlled environment.

I do not use samples as a "starter dose" for my patients. I do, however, find samples of drugs to be of value in that they permit me to see what the particular medication looks like. I get to see the various forms of the particular medication at first hand, and if it is in a liquid form I take the time to taste it. In that way I am able to give my patients more complete information about the particular medications that I prescribe for them.

---

capacity they are indeed useful; particularly in the fact that they disseminate broadly based educational material and serve not just as "pushers" of their drugs.

The Other Side of the Coin

Obviously, the pharmaceutical companies are not producing all this material as a labor of love—they are in the business of selling products for profit. In this regard the ambitious and improperly motivated sales representative can exert a negative influence on the practicing physician, both by presenting a one-sided picture of his product, and by encouraging the practitioner to depend too heavily on drugs for his total therapy. In these ways, the salesman has often distorted objective reality and undermined his potential role as an educator.

The Industry Responsibility

Since the detail man must be an information resource as well as a representative of his particular pharmaceutical company, he should be carefully selected and thoroughly trained. That training, perforce, must be an ongoing one. There must be a continuing battle within and with the pharmaceutical industry for high quality not only in the selection and training of its sales representatives, but also in the development of all of its promotional and educational material.

The industry must be ready to accept constructive as well as corrective criticism from experts in the field and consumer spokesmen, and be willing to accept independent peer review. The better educated and prepared the salesman is, the more medically accurate his materials, the better off the pharmaceutical industry, health professionals and the public—*i.e.,* the patients—will be.

Physician Responsibility

The practicing physician is in constant need of up-dated information on therapeutics, including drugs. He should and does make use of drug information and answers to specific questions supplied by the pharmaceutical representative. However, that information must not be his main source of continuing education. The practitioner must keep up with what is current by making use of scientific journals, refresher courses, and information received at scientific meetings.

The practicing physician not only has the right, but has the responsibility to demand that the pharmaceutical company and its representatives supply a high level of valid and useful information. I feel certain that if such a high level is demanded by the physician as well as the public, this demand will be met by an alert and concerned pharmaceutical industry.

From my experience, my impression is that sectors of the pharmaceutical industry are indeed ethical. I challenge the industry as a whole to live up to that word in its finest sense.

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Manufacturers Association
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When low back pain* interferes...

Help relieve pain, restore mobility with

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*This drug has been evaluated as "probably" effective for this indication.

See brief summary of prescribing information on facing page for Indications, Contraindications, Warnings, Precautions and Adverse Reactions.

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Each flag is crowned with the golden Double Eagle top ornament, symbol of the Bicentennial. Matching goldenized 6ft., two-piece, steel pole. Heavy-duty flag – 3 x 5 ft. – with double-stitched stripes, canvas heading and brass grommets. Complete with sturdy metal wall-mount bracket, 3 mounting screws, rope halyard, mounting instructions, and self-storage corrugated box.

With each flag kit you also receive your own full color parchment certificate, verifying your participation in the Fly the Flag for the Bicentennial campaign. Each certificate bears the 50-Star Flag, the golden Double Eagle, the names of the trustees and your own registry number. The ideal keepsake of the Bicentennial, suitable for framing and display in home or office.

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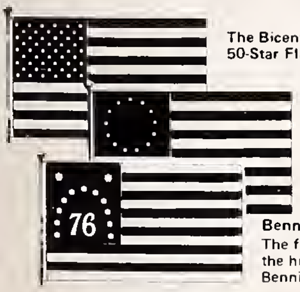

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and a skeletal muscle relaxant shown in extensive clinical studies to afford relief of discomfort in acute musculoskeletal conditions*[5-7] but which is not an antihistamine or tranquilizer derivative and is unlikely to produce a tranquilizing or sedative effect.[5,7,8]

* **Indications:** Based on a review of this drug by the National Academy of Sciences – National Research Council and/or other information, FDA has classified the indications as follows:
"Probably" effective as an adjunct to rest and physical therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Chlorzoxazone does not directly relax tense skeletal muscles in man.

Contraindications: Sensitivity to either component.
Warnings: *Usage in Pregnancy* – Use in women of childbearing potential only when potential benefits outweigh possible risks.
Precautions: Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or any signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped.
Adverse Reactions: Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, chlorzoxazone may possibly have been associated with gastrointestinal bleeding. While PARAFLEX® (chlorzoxazone) tablets and other chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately twenty-four patients, it was not possible to state that the dysfunction was or was not drug induced.
Usual Adult Dosage: Two tablets q.i.d.
Supplied: Scored, light green tablets, imprinted "McNEIL" – bottles of 100.

References: **1.** Batterman, R.C., and Grossman, A.J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L.S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4. New York, The Macmillan Company, 1970. **3.** Vickers, F.N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C.H., Jr., and Britten, A.F.H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Vernon, W.G.: Curr. Therap. Res. *14*:801, 1972. **6.** Scheiner, J.J.: Curr. Therap. Res. *14*:168, 1972. **7.** Walker, J.M.: Curr. Therap. Res. *15*:248, 1973. **8.** Data on file, McNeil Laboratories, Inc.

† U.S. Patent No. 2,895,877

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2. Be guided by the general rules of medcal writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

Rondomycin®
(methacycline HCl)

CONTRAINOICATIONS: Hypersensitivity to any of the tetracyclines.
WARNINGS: Tetracycline usage during tooth development (last half of pregnancy to eight years) may cause permanent tooth discoloration (yellow-gray-brown), which is more common during long-term use but has occurred after repeated short-term courses. Enamel hypoplasia has also been reported. **Tetracyclines should not be used in this age group unless other drugs are not likely to be effective or are contraindicated.**
Usage in pregnancy. (See above **WARNINGS** about use during tooth development.)

Animal studies indicate that tetracyclines cross the placenta and can be toxic to the developing fetus (often related to retardation of skeletal development). Embryotoxicity has also been noted in animals treated early in pregnancy.

Usage in newborns, infants, and children. (See above **WARNINGS** about use during tooth development.)

All tetracyclines form a stable calcium complex in any bone-forming tissue. A decrease in fibula growth rate observed in prematures given oral tetracycline 25 mg/kg every 6 hours was reversible when drug was discontinued.

Tetracyclines are present in milk of lactating women taking tetracyclines.

To avoid excess systemic accumulation and liver toxicity in patients with impaired renal function, reduce usual total dosage and, if therapy is prolonged, consider serum level determinations of drug. The anti-anabolic action of tetracyclines may increase BUN. While not a problem in normal renal function, in patients with significantly impaired function, higher tetracycline serum levels may lead to azotemia, hyperphosphatemia, and acidosis.

Photosensitivity manifested by exaggerated sunburn reaction has occurred with tetracyclines. Patients apt to be exposed to direct sunlight or ultraviolet light should be so advised, and treatment should be discontinued at first evidence of skin erythema.

PRECAUTIONS: If superinfection occurs due to overgrowth of nonsusceptible organisms, including fungi, discontinue antibiotic and start appropriate therapy.

In venereal disease., when coexistent syphilis is suspected, perform darkfield examination before therapy, and serologically test for syphilis monthly for at least four months.

Tetracyclines have been shown to depress plasma prothrombin activity; patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage.

In long-term therapy, perform periodic organ system evaluations (including blood, renal, hepatic).

Treat all Group A beta-hemolytic streptococcal infections for at least 10 days.

Since bacteriostatic drugs may interfere with the bactericidal action of penicillin, avoid giving tetracycline with penicillin.

ADVERSE REACTIONS: Gastrointestinal (oral and parenteral forms): anorexia, nausea, vomiting, diarrhea, glossitis, dysphagia, enterocolitis, inflammatory lesions (with monilial overgrowth) in the anogenital region.
Skin: maculopapular and erythematous rashes; exfoliative dermatitis (uncommon). Photosensitivity is discussed above (See **WARNINGS**).
Renal toxicity: rise in BUN, apparently dose related (See **WARNINGS**).
Hypersensitivity: urticaria, angioneurotic edema, anaphylaxis, anaphylactoid purpura, pericarditis, exacerbation of systemic lupus erythematosus.

Bulging fontanels, reported in young infants after full therapeutic dosage, have disappeared rapidly when drug was discontinued.

Blood: hemolytic anemia, thrombocytopenia, neutropenia, eosinophilia.

Over prolonged periods, tetracyclines have been reported to produce brown-black microscopic discoloration of thyroid glands; no abnormalities of thyroid function studies are known to occur.

USUAL DOSAGE: Adults – 600 mg daily, divided into two or four equally spaced doses. More severe infections: an initial dose of 300 mg followed by 150 mg every six hours or 300 mg every 12 hours. Gonorrhea: In uncomplicated gonorrhea, when penicillin is contraindicated, 'Rondomycin' (methacycline HCl) may be used for treating both males and females in the following clinical dosage schedule: 900 mg initially, followed by 300 mg q.i.d. for a total of 5.4 grams.

For treatment of syphilis, when penicillin is contraindicated, a total of 18 to 24 grams of 'Rondomycin' (methacycline HCl) in equally divided doses over a period of 10-15 days should be given. Close follow-up, including laboratory tests, is recommended.

Eaton Agent pneumonia: 900 mg daily for six days.

Children – 3 to 6 mg/lb/day divided into two to four equally spaced doses.

Therapy should be continued for at least 24-48 hours after symptoms and fever have subsided.

Concomitant therapy: Antacids containing aluminum, calcium or magnesium impair absorption and are contraindicated. Food and some dairy products also interfere. Give drug one hour before or two hours after meals. Pediatric oral dosage forms should not be given with milk formulas and should be given at least one hour prior to feeding.

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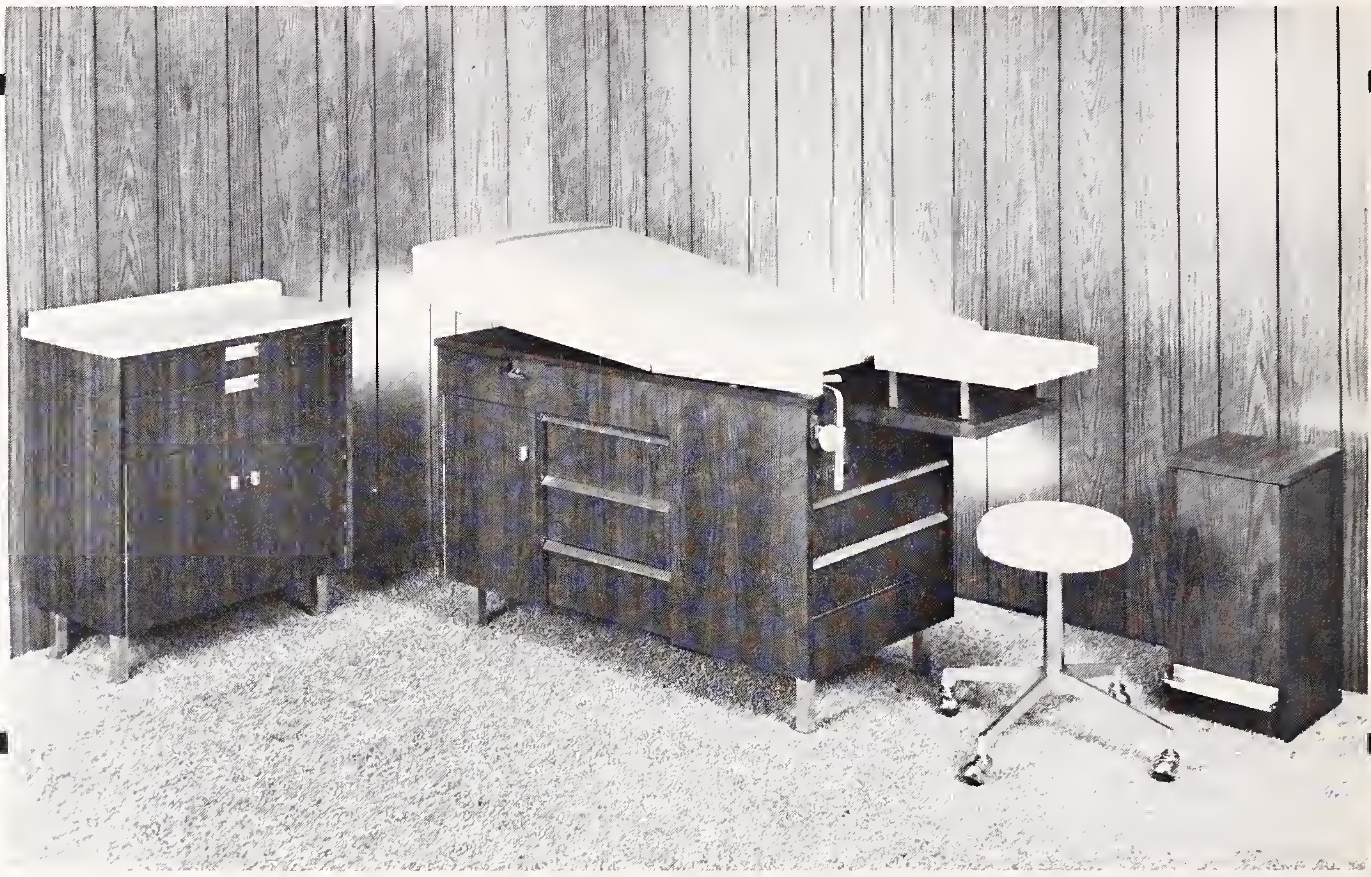

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Varnings: **Do not use dietary potassium supplenents or potassium salts unless hypokalemia evelops or dietary potassium intake is markedly mpaired.** Enteric-coated potassium salts may ause small bowel stenosis with or without lceration. Hyperkalemia (>5.4 mEq/L) has een reported in 4% of patients under 60 years, 12% of patients over 60 years, and in less han 8% of patients overall. Rarely, cases have een associated with cardiac irregularities. ccordingly, **check serum potassium during herapy, particularly in patients with suspected r confirmed renal insufficiency (e.g., elderly or iabetics). If hyperkalemia develops, substitute thiazide alone. If spironolactone is used conomitantly with 'Dyazide', check serum potasum frequently**—both can cause potassium rention and sometimes hyperkalemia. Two eaths have been reported in patients on such ombined therapy (in one, recommended dosage as exceeded; in the other, serum electrolytes vere not properly monitored). Observe patients n 'Dyazide' regularly for possible blood dysrasias, liver damage or other idiosyncratic eactions. Blood dyscrasias have been reported patients receiving Dyrenium (triamterene, K&F). Rarely, leukopenia, thrombocytopenia, granulocytosis, and aplastic anemia have been eported with the thiazides. Watch for signs of npending coma in acutely ill cirrhotics. Thiaides are reported to cross the placental barrier nd appear in breast milk. This may result in etal or neonatal hyperbilirubinemia, thromboytopenia, altered carbohydrate metabolism nd possibly other adverse reactions that have ccurred in the adult. When used during regnancy or in women who might bear hildren, weigh potential benefits against ossible hazards to fetus.

recautions: Do periodic serum electrolyte and UN determinations. Do periodic hematologic tudies in cirrhotics with splenomegaly. Antiypertensive effects may be enhanced in postympathectomy patients. The following may ccur: hyperuricemia and gout, reversible itrogen retention, decreasing alkali reserve vith possible metabolic acidosis, hyperglyemia and glycosuria (diabetic insulin requirenents may be altered), digitalis intoxication (in ypokalemia). Use cautiously in surgical paents. Concomitant use with antihypertensive gents may result in an additive hypotensive ffect.

dverse Reactions: Muscle cramps, weakness, izziness, headache, dry mouth; anaphylaxis; ash, urticaria, photosensitivity, purpura, other ermatological conditions; nausea and vomiting may indicate electrolyte imbalance), diarrhea, onstipation, other gastrointestinal disturbances. arely, necrotizing vasculitis, paresthesias, cterus, pancreatitis, and xanthopsia have ccurred with thiazides alone.

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Original Articles

THE NON-SURGICAL REMOVAL OF TWELVE RETAINED COMMON DUCT STONES WITH A DORMIA STONE BASKET AND REINSERTABLE "T" TUBE

A CASE REPORT

R. V. Stephens, M.D.
J. R. Marcaccio, M.D.
D. J. Alves, M.D.

A case report of a 64 year old male who accidently had his Common Duct, containing multiple stones, divided during exporatory surgery. Because of his clinical condition, direct removal was contrandicated. One year later, a Dormia Stonebasket was successfully used to extract twelve Common Duct Stones. A reinsertable "T" Tube of the author's design was used to decompress th Common Duct after the stone extraction.

Common duct exploration and operative cholangiograms have greatly reduced the incidence of common duct stones, however, even in the best of hands there is an occurrence of retained stones of between 1.4 and 9.0 per cent (10). Postoperative "T" tube cholangiograms revealing retained common duct stones present a significant and perplexing problem to the surgeon. Heretofore, there has been little alternative except to re-explore the patient, thus increasing the mortality and morbidity of choledochal surgery.

It would be advantageous to be able to remove retained stones safely, easily, and with a minimum of risk to the patient. The use of a Dormia stone basket and reinsertable "T" tube offers an alternative to surgery.

CASE REPORT

F.R., RIH #8722279, a 64 year old male was readmitted to the Rhode Island Hopsital for the fourth time on May 19, 1971. Ten years prior to admission, he was found to have a duodenal ulcer causing moderate symptoms which were well controlled with a bland diet and antacids until 1969, when he developed melena and associated fainting spells. Continued bleeding required a subtotal gastrectomy, Billroth II anastomosis, and ligation of a bleeding duodenal ulcer. Five days afterwards, he suddenly developed paralytic ileus and clinical signs of peritonitis requiring re-exploration. Surgery revealed a patchy mes-

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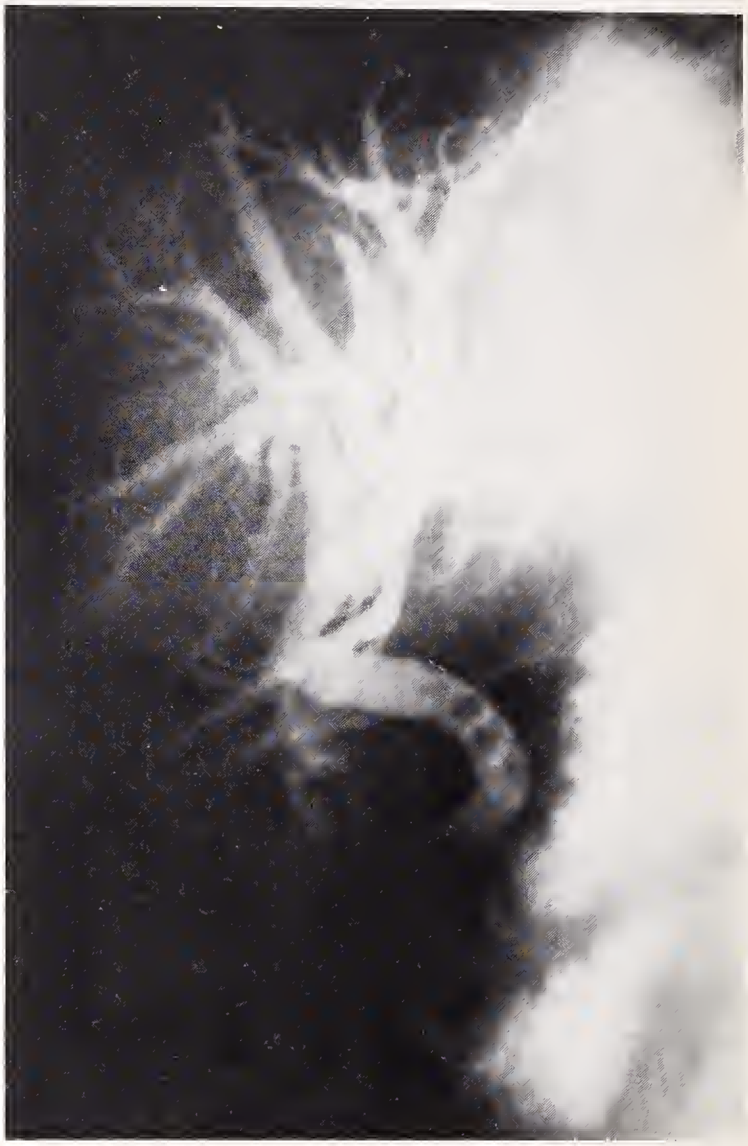
FROM: Physiological Surgeons, Ltd., (Dr. Stephens), Depts. of Urology & Radiology, Rhode Island Hospital, Providence, Rhode Island (Drs. Marcaccio and Alves). Reprint requests to 2021 N. Central Ave., Phoenix, AZ 85004 (Dr. Stephens).

enteric thrombosis. Because of its variable pattern, the intestine was decompressed and splinted with a Baker tube and the patient heparnized. Postoperatively, the vascular supply appeared adequate, but he developed a persistant right subhepatic abscess requiring surgical drainage on five separate occasions. He had a prolonged hospital course of 85 days, during which he required a tracheostomy for respiratory failure, steroids for adrenal insufficiency, and total parenteral and elemental diet therapy for severe malnutrition. In spite of these complications, the patient recovered and was discharged. In June of 1970 he was readmitted because of jaundice, fever and shaking chills. X-rays revealed stones within the common bile duct. Initial intravenous antibotic therapy was initiated, but with a worsening clinical course, surgery was necessary. During the dissection and exploration, the common duct was completely transected at the junction of the right and left hepatic ducts. Using a #14 Linton tube the duct was repaired, but because of the site and nature of injury, further choledochal exporation was not possible. Future elective surgery was planned for the removal of the common duct stones. Postoperatively the patient did well and was followed on an out-patient basis for one year. During this time he had continuous common duct drainage. Repeat "T" tube cholangiograms revealed the presence of multiple non-obstructing common duct stones (Fig. 1). Numerous dietary manipulations were tried in an attempt to spontaneously pass the stones. Pancreatic enzymes, nitroglycerine, atropine, and olive oil (Best flush) were used for five consecutive days twice a month without success.[1, 2] The patient refused consent for re-exploration and operative removal.



"T" tube cholangiogram showing multiple irregular stones within the common duct.

Therefore, in an effort to find a non-operative method of removing the retained stones, and in view of the recent articles of Lamis and McBurney[3,6], the patient was readmitted to the hospital. On 5/19/71 he was taken to the X-ray department and under fluoroscopic control, a Dormia catheter was inserted through the fistulous tract, after a "T" tube cholangiogram had been obtained. The Dormia catheter was easily inserted into the right and left hepatic ducts, the common duct and through the sphincter of Oddi into the duodenum. Using progressive passes it was possible to remove completely the retained common duct stones (Fig. 2). A total of twelve stones were removed, and the specially designed reinsertable "T" tube was positioned. Under fluoroscopic control there was no difficulty in determining where the catheter was at any time. The patient experienced absolutely no difficulty or sensation of pain. The procedure was accomplished in ap-

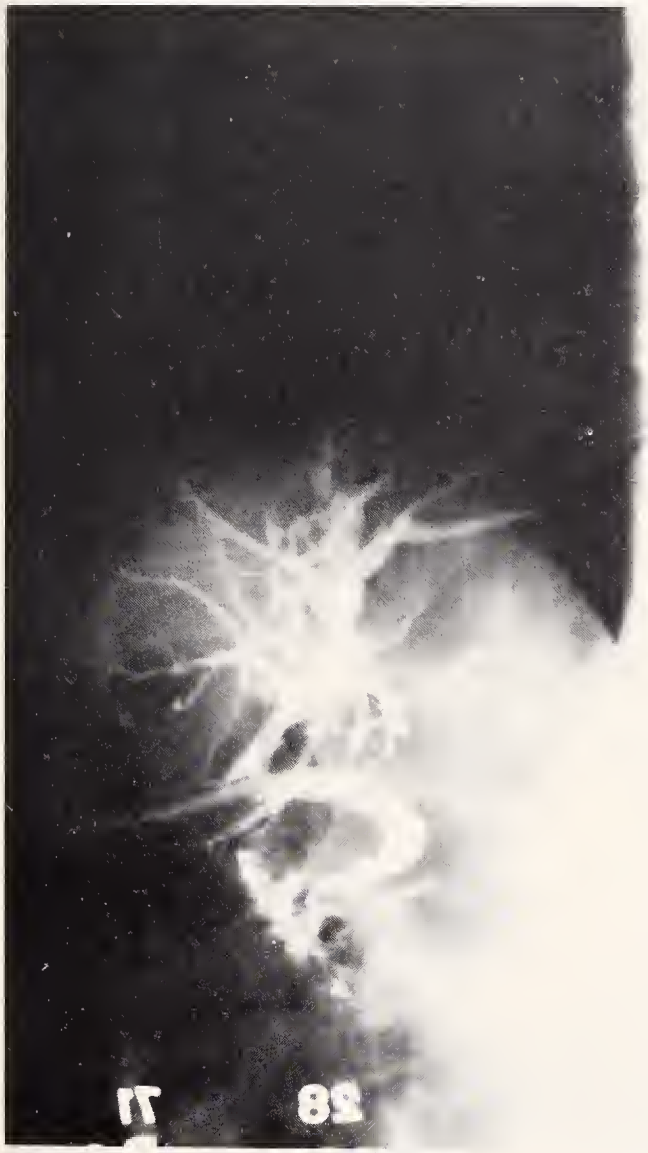


FIGURE 2
"T" tube cholangiogram after the non-operative removal of twelve common duct stones.

proximately 25 minutes. Afterwards he was returned to his room, placed on gravity drainage and discharged the following morning. Seven days later a normal "T" tube cholangiogram was obtained, the reinsertable "T" tube was removed. His fistula rapidly healed, he remains asymptomatic after 17 months.

DISCUSSION

At the time of surgery it was known that stones remained within the common duct, but because of the site of injury and difficult dissection it was not possible to remove them. Postoperatively the patient refused further surgery, thus forcing the use of the Dormia stone basket. For one year the patient was on continuous "T" tube drainage while numerous dietary manipulations were tried. Pancreatic enzymes, nitroglycerine and atropine were used in combination for five consecutive days, twice a month without success.

The non-operative fluoroscopic manipulation of the Dormia basket proved to be an ideal solution. Twelve large common duct stones were removed with ease, the patient experiencing no pain or discomfort. Total "operative" time was twenty-five minutes. The reinsertable "T" tube provided positive postoperative common duct decompression and was removed without incident seven days later, after a normal cholangiogram.

Retained common duct stones have long been an annoying, perplexing and embarrassing problem following common duct exploration. When this situation arises, the surgeon must make a decision as to what to do, knowing that re-exploration is accompanied by an increased morbidity and mortality. Surgeons have long been intrigued by the possibility of using the "T" tube as an access to the common duct. Non-operative techniques include chemical dissolution, hydrodynamic flushing and mechanical manipulation.

Flushing and chemical treatment of retained stones were first reported by Walker in 1891[11], using ether and glycerin. Since then there have been scattered reports on the use of other solvents, such as chloroform, to dissolve common duct stones[1,2,3,6,7,8]. Their use, however, may be hazardous. Recently, Insulin[13] and sodium cholate[14] have been used in attempted chemical dissolution with good initial results. There still remains a significant percentage of patients in whom these dissolution techniques fail. Lamis[3], using a Coude tipped catheter, was able to push several retained stones through the sphincter of Oddi in two patients. Mazariello[15] used a flexible Mondet forcep to extract approximately 86% of the retained stones in 76 patients. Mahorner[16] and Magarey[17] have previously reported the use of a

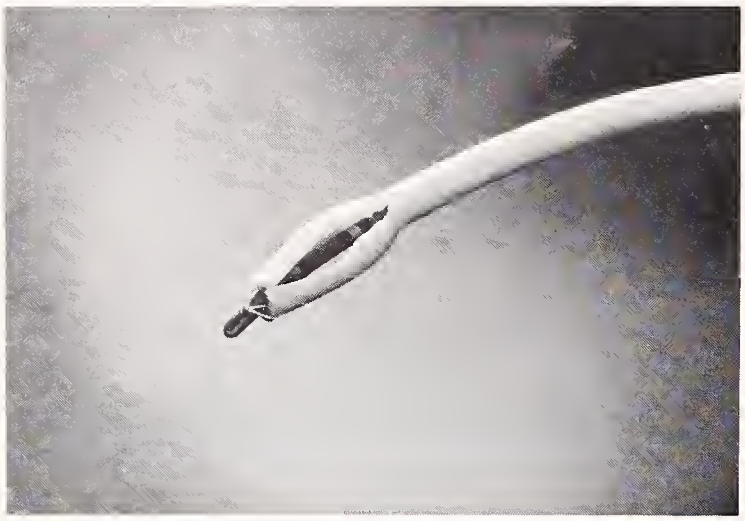


FIGURE 3
Original reinsertable "T" tube of our design shown in the closed position of insertion.

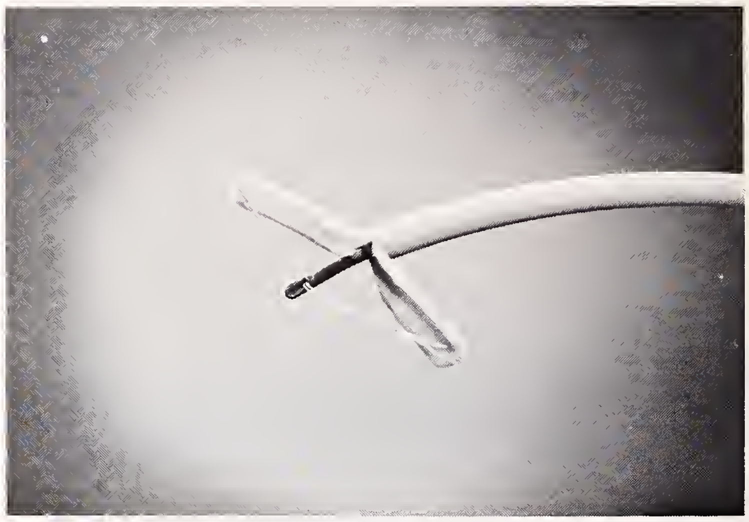


FIGURE 4
Original reinsertable "T" shown in the open position. Upon insertion the central stylet and attached guide lines are removed.

Dormia stone basket to remove retained stones. Our addition to their technique is the use of the reinsertable "T" tube.

The Dormia stone basket is readily available in most hospitals, and is widely used by urologists for the cystoscopic removal of ureteral stones. Under fluoroscopy, it is easily manipulated within the common duct as well as the hepatic ducts and major radicals. It is soft, pliable, and non-traumatic.

The reinsertable "T" tube of our design (Fig. 3 & 4) is easily fashioned from a standard "T" tube and #6 ureteral catheter. It is easily inserted through the fistula tract. Under fluoroscopic control its limbs are opened into the common duct, the central stylus and guide strings are then removed. The reinsertable "T" tube permits postmanipulative decompression of the common duct preventing any obstruction which may arise from edema or spasm of the sphincter of Oddi. Seven to ten days later it may be removed after a normal cholangiogram has been obtained.

SUMMARY

The retained common duct stone offers the surgeon a difficult and perplexing problem, knowing that re-exploration increases the risk and mortality. Non-operative procedures in the past have not usually offered a solution.

The Dormia stone basket is a simple non-operative method of removing multiple common duct stones under fluoroscopic control. The basket is easily and painlessly passed through the "T" tube fistula into the common duct, permitting the selective removal of individual stones within the hepatic ducts as well as the common duct. It is recommended that at least six weeks after the time of the original surgery to allow development of an adequate fistula tract. The original reinsertable "T" tube described here, we feel, is an important addition to this technique, permitting postmanipulative decompression and radiographic evaluation.

This paper reports the removal of twelve common duct stones with the use of a Dormia stone basket and reinsertable "T" tube. It is suggested that this procedure be considered prior to the decision for re-exploratory surgery.

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METABOLIC ACIDOSIS SECONDARY TO ACETAZOLAMIDE THERAPY A POSSIBLE HAZARDOUS SIDE EFFECT AFTER PROLONGED USE OF ACETAZOLAMIDE IN GERIATRIC PATIENTS. A CASE REPORT

George Lastnick, M.D., F.A.A.F.P.

ABSTRACT

A case of metabolic acidosis secondary to the administration of Acetazolamide is presented in a 75-year-old diabetic suffering from glaucoma.

The symptoms were vague and non specific. The intravenous administration of Sodium Bicarbonate had a temporary beneficial effect and only the interruption of the Acetazolamide reversed his condition.

Most of the patients on long term therapy with Acetazolamide for Glaucoma are geriatrics and different vague complaints presented by them, could be mistakenly attributed to conditions rather common in this age group.

For this reason, patients in this category should have their blood gases tested periodically, in order to rule out metabolic acidosis.

Acetazolamide is a carbon anhydrase inhibitor, which induces a state of renal tubular acidosis by limiting the hydrogen ion available for tubular secretion and producing a sodium and bicarbonate diuresis with the end result of metabolic acidosis. Some authors[1, 2] believe that when the serum bicarbonate is reduced to values approximating 12 to 15 M Eq/L., Acetazolamide ceases to be effective, because hydrogen ion again becomes available for renal tubular secretion and further bicarbonate loss will not occur in spite of continued administration of Acetazolamide.

O'Sullivan[2] indicates that the reduction of bicarbonate concentration in the extracellular fluid produces a smaller filtered load delivered to the renal tubules, so that the urinary bicarbonate loss stops soon and the metabolic acidosis is not progressive. Patton et al,[3] also believe that the metabolic acidosis due to Acetazolamide is mild and limited.

Other authors[4] believe that prolonged administration of Acetazolamide, increases urinary bicarbonate loss which can result in severe metabolic acidosis.

From: 10228 Coggins Drive, Sun City, AZ 85351 (Dr. Lastnick).

Bland[5] believes that the only dependable sign in metabolic acidosis is hyperpnea. Lethargy or coma are considered by some authors as manifestations of the underlying disease.

Others authors[4] believe that metabolic acidosis may be asymptomatic, but it can be accompanied by weakness, headache, malaise, abdominal pain, nausea, vomiting, while hyperpnea is usually a manifestation of severe acidosis.

A normal "undetermined anion of plasma" or "anion gap" restricts the diagnosis of metabolic acidosis to the administration of Acetazolamide or Ammonium Chloride, gastrointestinal loss of alkali or renal tubular acidosis.

REPORT OF A CASE

A 75-year-old man had suffered from diabetes mellitus since 1957. He was admitted to Boswell Memorial Hospital in Sun City, because he had lately complained of severe weakness, lack of appetite and occasional dizziness. His symptoms were attributed to his diabetes because he had not followed his 1500 calorie diabetic diet lately, and he had increased his amount of social drinking. The patient was also on Tolazamide 250 mg TID.

For the past two months he had been treated for glaucoma with Acetazolamide 250 mg. BID.

The physical examination did not reveal any pertinent objective pathological findings, related to his actual complaints. His vital signs were stable and he was not over-weight.

He spent eight days in the hospital. His first two hour post-prandial glucose reports showed values of approximately 230 mg., which were lowered to about 200 mg. on a 1500 calorie diabetic diet.

The addition of Tolbutamide 500 mg. BID to his diet lowered further his two hour post-prandial glucose to 179 mg.

The Clinitest taken three times daily was 2+ positive only on two occasions, reflecting the high blood sugar values. The rest of the time, the Clinitest was negative for glucose and acetone.

The blood lactate showed normal values. The other laboratory findings were unremarkable.

The first blood gas analysis showed a normal O_2 saturation and PO_2[*], PH 7.31, PCO_2 19, Actual Bicarbonate 9.5, base excess − 15, reflecting his severe metabolic acidosis.

The electrolytes were $Na+$138, CL^-107, K^+4, CO_2 21. The "Anion gap" showed a normal value of 10 MEq.

The Acetazolamide was interrupted and the patient was given a total of 133.8 MEq. Sodium Bicarbonate I.V., slowly, over several hours.

The next three blood gas analyses obtained the same day, after the administration of Sodium Bicarbonate, showed the following values: #2, PH 7.36, PCO_2 23, Bicarbonate 13, BE-11. #3, PH 7.39, PCO_2 23, Bicarbonate 13, BE-10. #4, PH 7.41, PCO_2 28, Bicarbonate 16.5, BE-5.5.

The next day, the blood gas analysis #5 showed a deterioration of the acid-base balance. PH 7.36, PCO_2 23, Bicarbonate 12.5, BE-11. We decided to withhold any further treatment with Sodium Bicarbonate. The patient was supervised closely, from a clinical point of view and his blood gases were monitored regularly. On succeeding days they showed the following values: #6, PH 7.37, PCO_2 22, Bicarbonate 12.5, BE-10.5. #7 PH 7.39, PCO_2 30, Bicarbonate 18, BE-6. #8, PH 7.39, PCO_2 24, Bicarbonate 14.5, BE-9. #9, PH 7.42, PCO_2 23, Bicarbonate 15, BE-8.

The improvement of his blood gases paralleled his clinical improvement. At the end of his hospitalization he did not offer any more complaints. His dizziness, weakness and lack of appetite disappeared completely. He was discharged to his home and after three days a blood gas analysis taken as an out patient showed a normal acid base balance, PH 7.40, PCO_2 37, Bicarbonate 23, BE-1.5.

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[*] The O_2 saturation and the PO_2 continued to show acceptable values in the following blood gas analyses studies and therefore we make no further reference to them.

COMMENT

It is believed that our patient's symptoms of vertigo, asthenia and anorexia, were produced by a metabolic acidosis, secondary to Acetazolamide administration. The administration of oral hypoglycemic agents may be responsible for inducing lactic acidosis. E. L. Harris[6] reports three cases of alcohol precipitated lactic acidosis. All these patients were on Phenformin.

A. H. Miller[7] describes a case of lactic acidosis in a patient who had taken Tolazamide (750 mg) and Phenformin (150 mg) daily, for 3 years. Metabolic acidosis induced by lactic acidosis causes an increase of the concentration of the undetermined anion of the plasma.

It was felt that the administration of Tolazamide was not responsible for our patient's metabolic acidosis. He did not have lactic acidosis (his blood lactate was normal), his "anion gap" value was normal, and the resumption of oral antidiabetic therapy (Tolbutamide 1 GM. daily), following the interruption of Acetazolamide therapy, did not induce metabolic acidosis any more.

It is noticed that the patient was not hyperpneic at any time. The correction of his metabolic acidosis, after discontinuing the Acetazolamide, ended his symptoms.

In this particular case the administration of Sodium Bicarbonate I.V. had a temporary beneficial result. One day after interruption of the Sodium Bicarbonate, his blood gases deteriorated again. The blood gases follow-up showed a progressive slow improvement, without any treatment, except the interruption of the Acetazolamide. Ten days after discontinuing the Acetazolamide, his blood gases returned to normal.

Geriatric patients have a high incidence of glaucoma. Acetazolamide is a very beneficial drug for this condition and it is used on a large scale by ophthalmologists.

General symptoms of the type presented by this patient and produced in his case by metabolic acidosis, could be mistakenly attributed to "old age", "arteriosclerosis", "chronic brain syndrome", "dyspepsia", etc. For this reason, it is advisable that the ophthalmologist and the general physician should be alert to these types of complaints in a patient treated with Acetazolamide and to rule out metabolic acidosis.

Blood gas analysis is an easy laboratory procedure, performed today in most medical centers.

Further experience may show that patients undergoing prolonged treatment with Acetazolamide for glaucoma, should have their blood gases tested periodically.

Nonproprietary and Trade Names of Drugs

Acetazolamide – Diamox
Tolazamide – Tolinase
Tolbutamide – Orinase
Phenformin – DBI, Meltrol

Acknowledgement

I appreciate the advice of Dr. Carl Wellish. I also wish to thank the Maricopa County Medical Library for continuous cooperation.

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C-PEPTIDE MEASUREMENTS: CLINICAL IMPLICATIONS

MARSHALL B. BLOCK, M.D.

FRED D. HOFELDT, M.D., LT. COLONEL, MC

C-Peptide measurements are an indirect way of measuring insulin production by the pancreas. Conventional insulin methods are not helpful if the patient has developed insulin antibodies or has received insulin by injection. In these areas, it may be helpful to be able to measure C-peptide in order to assess insulin production. Several clinical instances are cited where C-peptide measurements can be helpful in determining whether or not the patient is producing insulin.

The discovery of proinsulin, in 1967 by Steiner and co-workers at the University of Chicago[1] has led to significant advances in our understanding of insulin biosynthesis. It is now known that the A and B chains of insulin are produced in a single molecule and then converted within the beta cells of the islets of Langerhans to insulin and a connecting peptide (C-peptide). This latter protein is secreted from the beta cell with insulin in equimolar amounts. Once in the portal circulation, the liver extracts a good deal more insulin than C-peptide resulting in a much larger molar ratio between C-peptide and insulin in the peripheral circulation. At the present time, it is not known whether C-peptide has any biological actions. Studies to date *in vitro* have indicated

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The opinions or assertions contained herein are the private views of the author(s) and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

that it has minimal if any effects in systems in which insulin produces marked changes. However, the major impetus for research into C-peptide revolves around its uses as an alternative marker of beta cell secretion. Under normal conditions, it would not be necessary to measure C-peptide inasmuch as insulin is readily measured by numerous radioimmunoassays. However, there are conditions when endogenous insulin cannot be so measured. Under these circumstances, measuring C-peptide levels would be a way to monitor beta cell secretion.

One of the most important clinical situations where this would be of benefit arises in patients who are treated with insulin. These patients, due to the antigenicity of the bovine and porcine insulin preparations, develop antibodies to the insulin molecule which interferes with the immunoassay for insulin. It therefore is difficult to study the dynamics of beta cell secretion in such patients once insulin therapy is started and antibodies develop. Recent studies utilizing the C-peptide assay have clarified several facets of beta cell secretion in insulin treated patients which have a great deal of clinical relevance.

In juvenile onset diabetics, i.e., those who present in ketoacidosis at an early age (less than 20 years old) evidence for beta cell failure is readily available. In such patients, measurements of insulin or even insulin-like activity in the past failed to demonstrate significant secretion of insulin. These findings have been confirmed by the C-peptide assay.[2] However, many of these children undergo a period of remission following their episode of ketoacidosis. This period has been called the "honeymoon period" or the "Brush effect." During this time, insulin requirements tend to decrease and may even be omitted completely. Some patients can be followed with diet alone or diet and oral agents during this period. The duration may last for one week, months, or years. In the past, prior to the development of the C-peptide assay, it was thought that this remission phase was due to renewed beta cell secretion. That is, following the initial episode of ketoacidosis and therapy with insulin, the beta cells in the pancreases of such children were able to recover and secrete insulin. However, the development of insulin antibodies in these patients hindered the ability to measure insulin directly, thus these hypotheses were never readily open to experimental verification. With the C-peptide assay, measurements of C-peptide immunoreactivity have demonstrated that renewed beta cell secretion can take place during this period of time.[3] Most juvenile onset diabetics following such remission periods ultimately relapse and have increasing need for insulin again. Decreased endogenous insulin production has again been postulated to be the cause for this and again this was demonstrated with measurements of C-peptide.[3] Juvenile onset diabetics who have been treated with insulin for many years usually failed to have evidence of endogenous secretion and this too was demonstrated using C-peptide measurements.[2]

In adult onset diabetics who present in ketoacidosis, undetectable levels of insulin and C-peptide have been found during their acute episodes. Following these episodes, these patients were again studied and found to demonstrate renewed beta cell secretion.[2, 4] This is somewhat similar to the picture in the juvenile onset diabetics, however, when these patients were studied many years after insulin therapy, it was discovered that a majority of adult onset insulin treated patients continued to exhibit residual beta cell secretion.[2] A dramatic example of such a phenomena occurred in a 56-year-old woman who developed mumps pancreatitis and presented in ketoacidosis only to recover and have normal carbohydrate tolerance six months later.[5] Partial recovery of beta cell secretion has also been demonstrated in such patients which would be in keeping with their need of insulin.[3,6] This may help to explain the clinical finding that most adult onset insulin treated diabetics tend to be more easily controlled in terms of their carbohydrate metabolism. It is a well known clinical fact that many of these patients require only one dose of an intermediately acting insulin preparation in the morning to adequately maintain good carbohydrate control. On the other hand, juvenile onset diabetic patients tend to require split doses of both NPH and regular insulin in order to maintain fair control. Even still, these patients tend to have more frequent episodes of hypoglycemia and episodes of ketoacidosis. It may very well be that this residual beta cell secretion noted in the adult onset diabetic[7] but lacking in the juveniles, may somehow modulate intermediary metabolism and may make control easier.

Additional uses for C-peptide measurements have recently been reported. For instance, it has been postulated for many years that infants of insulin treated diabetic mothers at the time of birth have increased insulin secretion. This has been evaluated indirectly because insulin treatment in the mother results in the transplacental passage of antibodies to the fetus, thus hindering measurement of immunoreactive insulin in the offspring of such mothers. With measurements of C-peptide, studies to delineate beta cell secretory dynamics in such infants have now been undertaken. These results suggest that there is indeed enhanced beta cell secretion in such infants. Likewise, beta cell secretory dynamics during pregnancy in insulin treated mothers should now be open to scrutiny and an assessment of its effects on fetal morbidity and mortality undertaken.[6] In the differential diagnosis of fasting hypoglycemia, measurements of C-peptide may prove to be helpful in differentiating endogenous insulin production from an insulinoma from that due to the factitious injection of exogenous insulin. C-peptide levels should be elevated in the former and in the normal range in the latter condition. Likewise, the autonomy of islet cell tumors should be able to be determined. By measuring C-peptide levels following the injection of exogenous insulin or the production of hypoglycemia, one should be able to determine whether islet cell secretion is under normal physiological regulation. For example, C-peptide levels should not decline following the induction of hypoglycemia with exogenous insulin in patients with insulinomas who are secreting insulin independently of blood glucose levels.

In conclusion, measurements of C-peptide have enabled beta cell secretion to be monitored in patients in whom insulin levels cannot be interpreted either because of the presence of endogenous insulin antibodies or due to the presence of exogenous insulin. Furthermore, the physiological regulation of insulin secretion can now be studied under normal and pathophysiological conditions utilizing such measurements. Although these results are preliminary, if supported by further studies, there should be in the near future increasing use made of C-peptide measurements in helping to solve vexing clinical problems.

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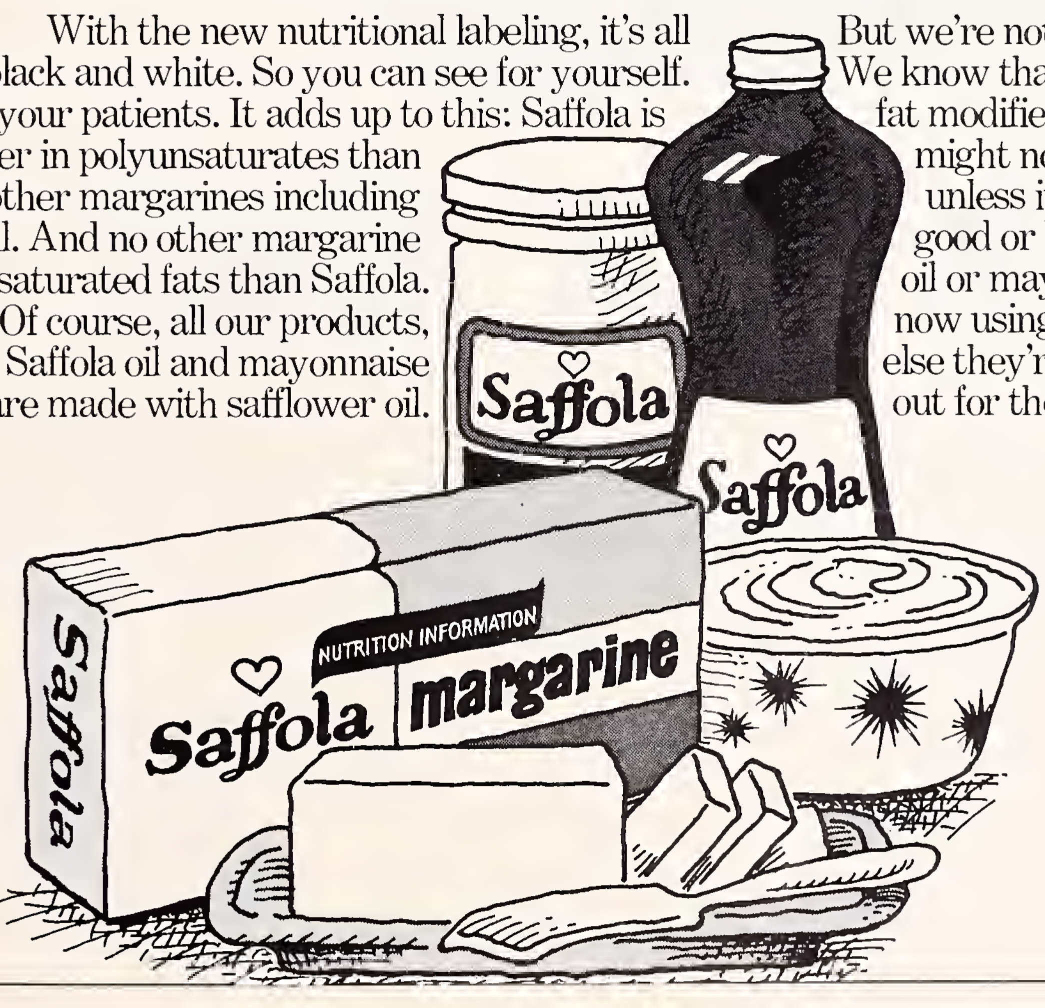

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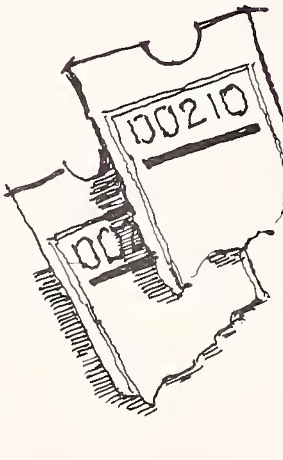

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COMMENTS ABOUT RECERTIFICATION

A number of medical organizations and some political figures have called for immediate action toward mandatory recertification of physician specialists. The precise source of this pressure is difficult to identify. The purpose is allegedly a guarantee of improved medical care, a demonstration of public accountability by the profession, and an overall investment in goodness. Scrutiny of some of the implications of recertification seems proper because of the definite possibility of a reverse effect on the hoped for goals.

The impact on the practicing, as opposed to the theoretical physican and the legal, technical and economic aspects of recertification, at present, have been only sketchily explored.

The practice of a specialty has many individual characteristics and these are determined by local customs, by individual specialist interest, by geographic concerns, by physical setting and equipment. Wouldn't competency, which is really the issue, be better tested by evaluation of the practice? Such evaluation could be done at less cost and still be directed at what the specialist is actually doing rather than at a theoretical level. Local or regional peer review seems a more rational way to handle physician competence than recertification. However, it will be necessary to modify the current methods and ways of the conduct of peer review if it is to replace recertification. The state specialty societies should take this responsibility, speak out against recertification and provide appropriate mechanisms for peer review.

John R. Green, M.D.

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Dean's Page

BREAST CANCER DEMONSTRATION PROJECT

NEAL A. VANSELOW, M.D.

There is no need to emphasize the dismay with which medicine views the poor, unimproving statistics in breast carcinoma. There is firm agreement, however, that early diagnosis, preferably when malignancy is occult, provides the best hope for cure. Medicine and the public are both confused when they read of the discrepancy in treatment enthusiasms. Unquestionably, this is a period of re-evaluation of this most frequent cause of death from cancer among women.

For years, breast self-examination has been urgently advocated. Many tumors have thus been found. In the past decade mammography and, more recently, thermography were added to the means of detecting breast cancer. The standardization of mammography and proof that it could be reproduced by many institutions and individuals as an effective method for detecting occult tumors lead to its wider utilization. It has demonstrated that breast cancer can be a multicentric lesion; it may be bilateral and can exist in a non-palpable state.

The National Cancer Institute and the American Cancer Society have now combined efforts to apply these techniques to the general population. Twenty-seven Breast Cancer Demonstration Projects were established across the country. Those eligible for examination are in the age group of 35 to 70 years, are asymptomatic and must voluntarily present themselves. The charge of the Breast Cancer Detection Clinic is to screen, without cost to the patient, 5,000 women in the first year, another 5,000 in the second year and to screen this group of 10,000 women continually for 5 years. The screening modalities are: a detailed medical history, particularly of breast disease; physical examination; the teaching of breast self-examination; mammography and thermography. All data thus collected go to a national computer center in Philadelphia for correlation with data from the 26 other screening projects. In the current projects with sufficient experience, screening has revealed 8 to 10.5 positive carcinomas per 1,000 examinees. Biopsy rate is sufficiently high to indicate that suspicious lesions are detected with a high rate of frequency.

The patient's physician is notified of positive findings and the patient is contacted to assure proper treatment and follow-up. Physicians are urged to furnish information regarding the subsequent history and findings, and pathologists are asked to submit biopsy information to the pathologist on the panel at the detection center.

The project has been approved and funded at the University Medical Center, and will be located in a house at 2231 E. Speedway. February 15, 1975 is the tentative date for beginning the screening program. The publicity accompanying the mastectomies of Mrs. Ford and Mrs. Rockefeller has generated a demand clearly evident in the 200 women who have volunteered and asked for appointments for the survey.

The stated objectives of the program are: 1) to find out if research methods for the detection of breast cancer can be applied to the general population through regular medical channels and 2) to determine the significance of a negative thermographic study as a means of excluding the need for other evaluations. We can also learn whether the women who volunteer constitute an adequate population for such a program and can assist in adequate follow-up. The American Cancer Society's cooperation in providing the volunteers makes the program possible. Without them it would fail. There is also an opportunity to confirm the observation that non-palpable breast cancer, promptly treated, will provide more years free of known disease than waiting for palpable evidence of cancer.

The measure of success will be the number of cancers detected and by the valuation of life prolongation in women with non-palpable breast cancer, as compared to studies of women with known, palpable breast cancer. Further, the education of the public may well be evaluated by the number of women in the project who continue self-examination of their breasts. Eventually, mortality rates can be compared for further program evaluation as follow-up occurs. Obviously, the project needs direction and continuing efforts by the volunteers, and by many faculty members and physicians in the state. Otherwise, this program would have little value.

Neal A. Vanselow

Obstetrics and Gynecology

CANCER OF THE UTERINE CERVIX

WILLIAM E. CRISP, M.D.

Carcinoma of the cervix remains the most common malignant neoplasm of the female genitalia, and the second most common cancer in women. With the availability of the cervix for routine examination, cancer of the cervix is curable in its incipient stages, but remains a most difficult lesion to treat successfully when it reaches a clinical, detectable stage.

ETIOLOGY

At the present time herpes virus is one possible etiologic factor under intensive exploration. Studies have demonstrated an association between the herpes type II infection and basic carcinoma of the cervix, based on the presence of herpes virus antibodies being demonstrated in significantly higher percentage of patients with invasive carcinoma of the cervix, than in comparable controls.

Promiscuity is one factor that may be predisposing to the development of cervical carcinoma. The general agreement among investigators is that cancer of the cervix is associated with early coitus. It is felt that there are two times of greater susceptibility – the menarche and after the first pregnancy. At this time the transition zone between the columnar epithelium and the squamous epithelium is undergoing metaplasia under the direct influence of the vaginal acidity which is a reflection of estrogen stimulation. At this time the metaplastic cells are phagocytic and it is postulated that they, under the influence of the trauma of intercourse will take up viral particles and thus atypical clones of cells start first as dysplasia and proceed in continuum into in situ carcinoma and invasive cancer of the cervix.

PATHOLOGY

Virutally all cases of cervical carcinoma occur either as squamous cell carcinoma or adenocarcinoma in a ratio of 95 to 5. The two main cell types behave in the same way and in general are treated the same way. The prognosis is thought to be the same, stage for stage.

CLINICAL MANIFESTATIONS

Clinical manifestations of carcinoma of the cervix vary depending on the extent of the lesion at the time it is discovered. At our own clinic at Maricopa County Hospital; the average age of the patient with dysplasia of the cervix was found to be 27 years old, the average age of the patient with carcinoma in situ, 32, 40.5 years was the mean age for invasive, Stage I carcinoma, 44.3 years for Stage IB carcinoma. In similar fashion the symptoms experienced by patients with carcinoma in situ vary according to the stage of progression at the time of discovery. 50% of the patients diagnosed with carcinoma in situ had no symptoms. Some form of abnormal bleeding was present in 18% at Stage I carcinoma of the cervix, 32% had no abnormal symptoms, whereas 68% had experienced some form of abnormal bleeding. Bleeding from cervical carcinoma usually takes the form of contact bleeding. The patient complains of spotting or irregular bleeding rather than an abnormal menstrual period. This is associated with trauma such as douching or coitus. The most common symptom is that of a purulent, foul vaginal discharge.

Physical findings associated with carcinoma of the cervix vary depending on the stage of the disease at the time of discovery. Staging of carcinoma of the cervix is described in the preceeding article. Dysplasia and inter-epithelial carcinoma are characteristically associated with a gross appearance of normalcy although there may be benign appearing erosions of the cervix. In Stage Ia carcinoma of the cervix the gross appearance is by definition not suspicious of malignancy, but the diagnosis is made from a Papanicolaou smear or directed biopsy with the aid of a colposcope.

Cervical cancer tends to spread by direct extension and metastasizes late. There is direct extension into the surrounding tissues particularly laterally into the cardinal ligaments. In addition to direct extension, cervical carcinoma spreads by the lymphatic dissemination of the regional lymph nodes in the pelvis. The bladder and rectum are in close proximity to the upper vagina and are frequently involved in advanced cases. The ureters traverse the cardinal ligaments and line a path of lateral extension of cervical cancer. Extension into these areas obstructs the ureters resulting in hydroureter and hydronephrosis and if uncontrolled by therapy, uremia ensues. This is the most common cause of death from cancer, with hemorrhage being the next most common cause.

DIAGNOSIS AND EARLY DETECTION

The cervical cytological screening (the Papanicolaou smear) should be a standard part of all physical examinations done on women whether they are pregnant or non-pregnant. This is such a routine part of the examination at physicians' offices that it is hard to realize that in Arizona only 31% of the population have an annual Papanicolaou smear.

The diagnostic method used following an abnormal cytologic smear depends on the presence of absence of a suspicious lesion. If such a lesion is present in the cervix it should be biopsied. In cases where no lesion is present on the cervix suspicious areas may be identified by Schiller stain, or the patient should be referred to a center for colposcopic examination and directed biopsy. If there is a question on the biopsy as to invasion or the extent of the lesion, a conization which includes all the suspicious areas in transition zone and the endocervical canal should be done.

TREATMENT

Once the diagnosis of cervical cancer is made, the patient should be referred to an institution for a work-up and staging before a definitive decision is made as to the best therapy for that particular individual.

Since the staging of cervical cancer and the use of radio-therapy in treatment of cancer of the cervix is discussed in the adjoining article, my remarks therefore will concern the use of surgery in the treatment of cervical cancer.

Dysplasia which is the earliest diagnosed atypic in the continuum that precedes to cancer of the cervix may be treated by simple surgical excision, or cryosurgery. Carcinoma in situ of the cervix may also be treated by conization and cryosurgery providing the patient wants to have further children. If she has had her family then most people would agree that the best treatment is total hysterectomy. Since one criteria for the diagnosis of microninvasive cancer of the cervix is not yet well established, it is treated by radical surgery.

The place of radical surgery in invasive cancer is confined to the early stages of the disease, Ia, Ib, and IIa, especially in younger individuals and in those patients who have associated local pathology that would contraindicate the use of irradiation such as pelvic inflammatory disease or adnexal disease.

In stage I disease the operations used at the present time are the Wertheim, which is a radical abdominal approach in which the ureters are dissected from their tunnel and the uterus, cervix upper third of the vagina and the cardinal ligament web are dissected in toto. It is also common practice in this country to remove the lymphatic chain which drains the cervix which includes the obturator, hypogastric, common ileac, and presacral lymph nodes. The radical vaginal procedure (the Schauta procedure) is also utilized in early stage I disease, in patients who are anatomically suited with a wide pubic arch. This operation removes the same structures from below and has the added advantage of increased operability and less morbidity. Whether or not the ovaries are removed in either procedure depends more or less on the patient's age, since cancer of the cervix rarely spreads to the ovaries.

The major problems following radical pelvic surgery are those of genitourinary fistulae which occurs now in approximately 5% in the abdominal procedure, and less than 1% in the vaginal procedure.

Surgery in combination with radiation is also indicated in those patients who have large central bulk disease with residual central tumor (the barrel lesion) and in those patients who have persistent or recurrent disease. Once the disease has extended into the bladder and/or rectum an exenterative procedure is done depending on the spread of the tumor. It has been our experience that in most patients who have had complete irradiation therapy with recurrent tumor, that the best procedure is a total exenteration. This includes removal of the lower ureters, bladder, rectum, uterus, the adnexal structures, vagina and the paracervical tissue, and creation of an ileal bladder.

In most cases an artificial vagina is made at the time of the exenteration. A five-year survivorship of 32% justifies this extended operation in selected cases.

The best treatment for the patient with cancer of the cervix is individualized treatment in a center which has all the variations and combinations of radiotherapy and surgery, chemotherapy, along with supporting facilities that are necessary for the complete physical and emotional care of the patient.

Clinical Oncology
In Arizona

RADIOTHERAPY OF CANCER OF THE CERVIX

CHARLES H. TAGGART, M.D.

This new section ain Arizona Medicine is specifically targeted to the subject of cancer care in the state of Arizona. Recognition of the importance of cancer management has been underscored by the establishment of the conquest of cancer as a national goal. In this column, current concepts in cancer management and recent advances in cancer research that are relevant to Arizona, will be discussed each month. Cancer therapy is currently changing at an extraordinarily rapid rate, and the views expressed on this page should not be considered as static recommendations. The editors of this column will select key topics and invite interested physicians and allied health professionals from Arizona to write components related to areas of thei rexpertise in cancer.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

The preferred treatment of squamous cell carcinoma of the uterine cervix is radiation therapy. Selected early or advanced cases of cervical carcinoma are treated by radical surgery — a topic discussed in the Obstetrics and Gynecology section of this issue. Although the surgical aspects of treatment are in a different section, this does not imply that evaluation and treatment should be fragmented. Quite the contrary, close cooperation between gynecologist and radiation oncologist is essential in determining the best course of treatment for any given patient.

EVALUATION AND STAGING

The staging pelvic examination (preferably under anesthesia) is the keystone to treatment planning (Table 1). Ideally, the gynecologist and radiotherapist should both participate in the staging pelvic examination so that differences in interpretation of anatomy and pathology can be discussed and resolved without delay. An important point to remember in the staging examination is the use of the right hand to feel the right side of the pelvis and the left hand to

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From: Dept. of Radiation Oncology, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006 (Dr. Taggart).

TABLE I
STAGING OF CARCINOMA OF THE CERVIX

Stage I	The Carcinoma is strictly confined to the cervix.
Stage II-A	Carcinoma has extended beyond cervix to the vagina but has not reached the parametria or the lower third of the vagina.
Stage II-B	Carcinoma has extended into the parametrial areas.
Stage III-A	Carcinoma has extended to the pelvic wall and is fixed to that structure; or has extended to the lower one third of the vagina.
Stage II-B	The Carcinoma has extended to both the right and left pelvic walls or has extended to one pelvic wall and the lower one third of the vagina.
Stage IV	Carcinoma has extended into the bladder, rectum, or outside the true pelvis.

feel the left side of the pelvis. The backs of the fingers are notoriously insensitive to the detection of early induration involving the parametrium, rectovaginal septum, or vaginal wall and fornices.

Important laboratory tests in initial evaluation of the patient are the CBC (The hemoglobin should be above 10 grams to insure adequate oxygenation of the tumor for radiation therapy), a urinalysis and a chemistry profile (including BUN and alkaline phosphatase). Basic x-ray studies include a chest x-ray, IVP, and bone survey. A lymphangiogram is mandatory in patients with Stage II cervical cancer or higher in order to delineate the presence or absence of involved pelvic and/or para-aortic lymph nodes. Large Stage I lesions should probably also have a lymphangiogram. A lymphangiogram is helpful in radiation therapy treatment planning for the proper shaping of treatment portals to cover all areas of known disease. A barium enema is necessary not so much to determine whether the rectal wall is involved by tumor but to determine whether any pre-existing bowel disease would require modification of the radiation therapy plan. Proctosigmoidoscopy is more revealing of rectal wall penetration than are x-ray studies. Cystoscopy will reveal the presence of bladder extension. Bullous edema of the bladder by itself is not necessarily indicative of bladder penetration by tumor. However, many urologists are loath to biopsy this area of edema for fear of causing a fistula.

Exploratory "Staging" laparotomy is practiced at some institutions as an experimental measure but I do not consider it necessary for adequate work-up of the patient.

RADIATION TREATMENT

In the treatment of most Stage I and early Stage II lesions the emphasis is on intrauterine and vaginal radium therapy. These relatively small and central lesions fall well within the range of the radiations eminating from radioactive radium of cesium sources. For early Stage I lesions two seventy-two hour applications separated by a two week rest interval is the rule. The low incidence of pelvic lymph node metastasis makes external pelvic or parametrical radiation unnecessary. More advanced Stage I lesions and early Stage II lesions require some reduction of the radium dosage and the addition of whole pelvic and/or parametrial external radiation from a supervoltage source. External radiation from either a linear accelerator, betatron or a Cobalt-60 source should be delivered at a rate of from 850 to 1000 rads per week depending on patient's thickness, pre-existing bowel pathology and field size.

Most intrauterine and vaginal radium applications are done by the afterloading method. In this method, non-radioactive applicators are inserted inside the uterine cavity and vaginal fornices at the time of anesthesia. Later pelvic localization films of the radium applicators with dummy sources in place are taken. After evaluation of these films specific radium loading is performed in the patient's room. In this manner, radiation exposure to operating and recovery room personnel is significantly reduced.

Precise calculation of dose distribution can be determined through the use of a special computer. Average doses from the radium applications and external irradiation are as follows: Pelvic walls (Point "B") 500 rads; the immediately adjacent parametrical area (Point "A") 8000 rads and to the cervix itself, 12,000 to 14,000 rads. These high central doses are generally well tolerated and healing is the rule.

With Stage III and IV lesions, the emphasis on treatment is toward external therapy. Whole pelvic doses up to 7000 rads can be delivered with a variety of radiation techniques. These doses are reserved for the advanced Stage IIIB and IV lesions. After a whole pelvic dose of 5000 rads has been delivered, a single seventy-two hour radium application is usually performed. Again, using computer techniques for precise calculation of dose, determination of whether additional parametrial radiation is necessary can be established. Doses in the range of 5500-6000 rads to lateral pelvic walls are generally well tolerated.

SPECIAL SITUATIONS

Unusual circumstances in regard to carcinoma of the uternine cervix deserve special mention. After completion of a full course of radiation, the tumor mass sometimes does not immediately regress. An interval of 8 weeks after the completion of radiation treatments can pass before deciding on further therapy. If the lesion is a bulky Stage IIB or partially regressed Stage III, a hysterectomy to remove this large anoxic mass should be done.

Carcinomas arising in a cervical stump cannot usually have adequate radium applications because of the short endocervical canal. These lesions are treated with a combination of external and transvaginal radiation therapy. If persistent disease is noted a trachelectomy should be done.

The pregnant patient presents very special problems. If the pregnancy is 24 weeks or less, an abortion should be performed and followed by the usual treatment. If the patient is in her last trimester and the lesion is not immediately life threatening, she is allowed to proceed to the point of fetal viability and a cesarean section is done. Vaginal delivery is contraindicated. Patients who are pregnant with invasive cancer of the cervix have essentially the same survival statistics than those who are not pregnant.

Adenocarcinomas of the uterine cervix also present special problems. It is thought that these patients do poorly unless a hysterectomy is added. This is probably because there is a higher incidence of myometrial invasion with adenocarcinomas. In most series, adenocarcinomas have essentially the same survival statistics stage for stage as squamous carcinomas.

Patients who have had incomplete or inadequate surgery frequently are seen by the radiation oncologist. Patients presenting with such lesions should receive a full course of radiotherapy.

COMPLICATIONS OF TREATMENT

As the external radiation dose increases, the incidence of bowel complications also increases. The most sensitive area of the intestinal tract to radiation is the terminal ileum. Damage to this area occurs more often in patients who have had previous pelvic or bowel disease or multiple surgical procedures. Radiation-induced ileitis can be life threatening and sometimes resection of the affected bowel is necessary to save the patient's life. Fortunately this complication is uncommon.

A more common complication is irritation of the sigmoid colon ("Sigmoiditis"). This is characterized by intermittent diarrhea, cramping and intolerance to certain foods. Antispasmodics, diet modifications and anti-inflammatory agents can often help this problem. Occasionally surgical intervention is necessary.

Fortunately, bladder complications are unusual. When they do occur they are usually due to improper packing of the vaginal ovoids at the time of radium application or to extremely high external radiation doses.

RESULTS

The results of radiation therapy for invasive carcinoma of the cervix is listed in Table II. With present techniques and their present state of sophistication, it is unlikely that there will be much more improvement through further radiation therapy refinement. The following important points deserve repetition: 1) A careful pelvic exam under anesthesia is required for adequate staging; 2) Close cooperation between the radiation oncologist and the gynecological surgeon is necessary in the staging procedure and in determining the best course of therapy; 3) Lymphangiography should be used routinely for the evaluation of extent of disease in large Stage I lesions and Stages II through IV; 4) Education of the public of the importance of routine annual or semi-annual Pap smears to detect early in situ cervical carcinomas before they become invasive.

TABLE II
RESULTS OF RADIATION THERAPY

	5 Year Survival	
Stage I	91.5%	
Stage II-A	83 %	78%
Stage II-B	73 %	
Stage III-A	56 %	46%
Stage III-B	38 %	
Stage IV	14 %	
All Stages	63 %	

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Seminars in Endoctrinology and Metabolism

HYPOGLYCEMIA: CLINICAL IMPLICATIONS

PART II: FASTING HYPOGLYCEMIA

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

In contrast to the complexity of the diagnosis of reactive hypoglycemia discussed in the first part of this series on hypoglycemia, fasting hypoglycemia is simply defined by most investigators as a blood sugar below 50 mg.% 8 to 10 hours after the last food intake. In order to understand the possible causes of such a condition, it is necessary to first describe very briefly the normal homeostatic mechanisms the body has for maintaining a normal blood glucose concentration during fasting.

Foremost in the regulation of the blood glucose concentration is the liver. As it is uniquely situated anatomically to receive blood carrying the absorbed foodstuffs from the gut as well as the two key hormones coming directly from the Islets of Langerhans, insulin and glucagon, it mediates the effects of these hormones and others by controlling the rate of glycolysis, glycogenoly-

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sis, glycogenesis and gluconeogenesis. The enzyme systems involved in these biochemical processes are extremely sensitive to the latter hormones. Through these various biochemical pathways glucose is either conserved in the form of glycogen to be thus utilized when glucose intake is low, or is metabolized when it is present in excessive quantities. This liberates energy which then can be used in other ways. Likewise, through gluconeogenesis, various amino acids, which can be liberated during the fasting state from muscle stores, are transported to the liver where they can be converted to glucose. This latter process also involves a close interplay between insulin and glucagon in the peripheral blood circulation in addition to their direct effects on hepatic biochemistry. Furthermore, during a fasting state, adipose tissue serves as a source of free fatty acids which are converted in the liver to ketone bodies. They in turn are used in the adapted starvation state by the brain which under normal circumstances utilizes only glucose. This helps to conserve the blood glucose level during a fast.

With this background it is thus possible to postulate and understand the various causes of fasting hypoglycemia. Although a discussion of all the causes are beyond the scope of this presentation, the more common varieties will be discussed in some detail in order to alert the physician to their presenting symptoms and ultimately to their treatment.

Probably the most talked about but least seen cause of fasting hypoglycemia is that of a pancreatic beta cell adenoma or carcinoma. These tumors, arising from the Islets of Langerhans, secrete insulin autonomously and can produce high circulating immunoreactive insulin levels. Since glucose is the major stimulus for insulin secretion, during a fast when blood glucose levels are not elevated, insulin secretion is normally minimal. However, an adenoma or carcinoma with autonomous function, under these circumstances continues to secrete insulin thus causing the blood glucose level to decline. The body attempts to counteract the hypoglycemia by secreting counter regulatory hormones such as glucagon, epinephrine, growth hormone, cortisol and others in an apparent attempt to return the blood glucose level to normal. Because of the great biological activity of even small quantities of insulin under these circumstances, the blood glucose level remains low. This then, is one of the ways of substantiating the presence of an insulinoma, i.e., a 72 hour fast. During such a study, blood sugars and serum insulins are obtained at frequent intervals and if the patient develops symptoms immediate blood sugar and serum insulin determinations are obtained to ascertain whether these symptoms are indeed caused by hypoglycemia. The serum insulin measurements are held but not sent out unless the patient does have hypoglycemia, and then a glucose-insulin ratio can be calculated. Obviously, under normal circumstances the insulin level should be extremely low when the blood sugar is very low. If, in fact, this is not the case, the glucose-insulin ratio will be smaller than what would be expected and the presence of an insulinoma would be suspected. Since insulin is made by a larger molecular weight precursor, proinsulin, it is not surprising that tumors which are not under the usual restraints may secrete large amounts of this precursor into the circulation[1]. It thus can be detected in the circulation and may be very helpful in defining the presence of an insulinoma[2]. Because it has similar immunological features to the native insulin molecule it can be measured in the insulin immunoassay and thus quantitated after the compounds are separated by molecular weight. Other forms of localizing an adenoma include angiography. This is sometimes helpful from a surgical point of view but many times gives a normal study when an isolated small adenoma is present. Carcinomas are usually more aggressive and are metastatic to the liver. They can deform the duodenal bulb and thus can be picked up on upper gastrointestinal radiographs. The type of tumor that is present will determine whether a surgical approach is needed. With small adenomas not localized pre- or intraoperatively, resection of the pancreatic tail and body has been recommended while simple enucleation is usually curative in larger adenomas. In those states where carcinoma is present and metastases have occurred, various chemotherapeutic agents have been tried with limited success. These include Dilantin, Dyazoxide as well as L-asparaginase[3].

Other non-pancreatic tumors have been associated with fasting hypoglycemia and these include hepatomas, retroperitoneal sarcomas and recently cervical carcinoma. The pathophysiology may be multiple but for hepatomas excessive glucose metabolism by the tumor itself can be responsible for the fasting hypoglycemia[4]. In the other varieties, ectopic insulin production or the secretion of another hormone having insulin-like activity with different immunological characteristics (non-suppressible insulin-like activity, NSILA) has been found[5]. The treatment of these latter conditions obviously will depend upon the scope of the tumor, their location and possible metastases. Chemotherapy in the more advanced tumors similar to that used in pancreatic islet cell carcinomas may prove beneficial.

Probably seen more commonly than the tumorous causes of fasting hypoglycemia is that produced by excessive intake of alcoholic beverages. During the metabolism of ethanol a great deal of necessary hepatic co-factor is utilized. Since this substance is essential for gluconeogenesis its absence inhibits this process in the liver resulting in episodes of hypoglycemia during periods of poor caloric intake. Similarly, there are various drug-induced varieties of hypoglycemia. Most of these are related to the treatment of diabetes mellitus. The most common cause is due to an overdose of insulin, either accidental or intentional. There have been case reports of patients feigning fasting hypoglycemia by giving themselves injections of insulin. Overdoses of tolbutamide and chlorpropamide have been reported to produce profound hypoglycemia. In many of these patients decreased renal function was present. Apparently these drugs' metabolites have biological activity and with decreased renal excretory function they have a prolonged half life producing hypoglycemia. Phenformin, another of the oral antidiabetic agents has not been as yet incriminated in producing hypoglycemia.

Other causes of fasting hypoglycemia for which the etiology is not readily apparent are that which occurs in renal failure[6], in congestive heart failure[7], in primary adrenal cortical insufficiency and hypopituitarism. The exact pathogenesis of these conditions has not been clarified but either decreased delivery of gluconeogenic or lipolytic substrates to the liver or deficiences of the various hormones responsible for the mobilization of these intermediary metabolites has been postulated as being responsible.

The treatment of the non-tumorous causes of reactive hypoglycemia is straightforward. The administration of glucose intravenously during the acute phase with careful observation till the patient fully recovers is indicated. Removal of the offending drugs or agents or correction of the underlying metabolic problem usually results in spontaneous recovery. If not, additional diagnostic studies should be undertaken to exclude the presence of another cause that has been mentioned above.

In summary, the underlying causes of fasting hypoglycemia are more discrete and usually identifiable than those of reactive hypoglycemia. It therefore is extremely important to differentiate these two varieties of hypoglycemia in order to correctly treat the patient.

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Editorial

AVOCATION

WILLIAM B. McGRATH, M.D.

One does not grow older. One shrivels. The implacable force of gravity outweighs our vanity in straightening our shoulders and pulling in our tummy. Toenails, too far down there for clippers to trim, become ingrown and yellow. No longer taut with tissues, the skin of our forearm looks like the wrinkled slender paper bag from which a quart of booze has been removed. And as if we were already planted in the ground, the hairs grow longer in the miniature flowerpots of our nostrils and ears.

Not for me some unctuous mortician-embalmer. I want a dingaling taxidermist! And I want the bust of myself on the wall at the Medical Society. (Feminist: the word "bust" here has sculptural not mammary reference. It also means "flop", but that too is double entendre.) First let there be a whooping Irish wake, with Boyden and his calliope and the Board of Directors singing "Danny Boy."

A man should be encouraged to compose his own obituary. If ours included all the embellished tales of our checkered early adventures, you would have to calculate our age at approximately one hundred and sixty years.

The editors ask plaintively why we parcel out these observations on aging instead of writing a complete and coherent essay. But such would leave you mournful and lachrymose. Our preamble does amble like an uncollected horse. The bell has rung and will the class please come to order?

A man who does sedentary work needs physical exercise. This is especially true of the individual whose work is mainly mental. For the professional man, the scientist, the executive, such activities as golf or hiking are essential. This is so glaringly true that it blinds us to a far more important truth: cerebral recreation, in all connotations of the term, has to be cerebral.

The harrowed mind may be distracted by an exhilarating game of handball or tennis. But the mind is *not* thereby rested and refreshed. The mind finds its rest only by being diverted into quiet thinking.

A pedestrian example is the businessman or stockbroker decompressing in a pleasant game of bridge. As play is a rehearsal for a real activity, so the game is a diminutive or microcosm of the executive's competitive chance-taking and his making of weightier decisions.

In this context one of the most priceless things in the world is a blank page of paper. In solitude and away from your relationships and what you do to make a living, you can see in the blank page, the tabula raza, a wonderful and boundless invitation.

It can engage your mind in ways that are totally different from your work. It is innocent. It does not have to hurry to meet any deadline. It is not competitive or subject to extraneous demands. Like a bottle of whiskey, you can use it entirely on your terms and you cannot be a disappointment to it. It has no imposed dimensions of length or depth or breadth or color or size or shape.

Depending on your talent or inclination you can project onto the page anything you want. Since it is not your source of income or the measure of your reputation, it does not matter whether your creation is trivial or profound, skilled or amateurish.

Note, please, our use of the word creation. It is crucial to the idea we are trying to impart. If you are a musician, for example, and you play only the work of others, even if you are perfecting your skill, you are missing the point. You have to try to compose your own music in order to relax from the unrelenting tribulations of responsibility. Otherwise you had as well work out on a punching bag, getting the physical exercise but failing intellectual restoration.

Indulge, if you will, the conceit of an egocentric illustration. (The conceit is measurable: as a writer I cherish my amateur standing.) Mine is a verbal and therefore somewhat linear and one-dimensional orientation. So I wrote on the blank page, "God is a gerund." This led to thinking how structure and function can be viewed separately, like the two sides of one coin. I began fussing then that talking about a function, mind, as if you could separate it from its structure, brain, constitutes ninety percent of the nonsense purporting to be a science of psychology.

The ophthalmologist cannot treat a disorder of vision without looking at the eye. The behaviorist and his client are in a carnival hall of distorting mirrors, but they don't have sense enough to laugh at themselves.

In another mood and context I can put on the paper an expression which is beyond dimension: "Look up: those stars are the lights of the City of God." This is the difference between prose and poetry. Blessed with everything else in the world, if I didn't have this mental workshop I'd be stark, raving mad.

A more nearly two or three dimensional intelligence, such as that of a surgeon, for example, might try to conceive and project a concept by painting or sculpture. (The Indian weaves the eye of God at the center of a geometric design.) To repeat and emphasize a point: it does not matter if one falls short or seems to fail. One's restive mind will relax and function effortlessly and therefore at its best when it is not trying to hurry or to live up to someone else's real or imaginary expectations.

To sum up with an unoriginal metaphor: there are four legs to the chair of mental stability: one's personal relationships, one's career identity, one's physical conditioning, and last but of equal length and importance, one's private intellectual avocation. Each of these has to be active, not passive. ("By use to render it mine own.")

One thinks of fanatics or certain political figures. They get too wrapped up in themselves and in their public images. They become unbalanced by ignoring termites in one or another of these struts. A normal man cannot live at the "Y" without family or friends. One cannot exist or feel welcome in the world without job identity or reputation. One cannot stay healthy, lacking a sense of play or without active participation in some physical recreation.

To watch a football game on television does nothing to eliminate the toxins of nervous fatigue or to tone the musculature. To read a book or to listen to a symphony or to collect and appreciate fine paintings will not suffice. One must *do* something with the mind, one must take it into control, to guide it into some sanctuary of its own.

Alone and absorbed in thinking of a memorable phrase or creating an original design or work of art, a person is finding himself; he is in touch with his own self. Self expression does not need an audience. A man is entitled for a little while not to be conscious of ambivalence, not to feel the tug of that rubber band which is present in all of his relationships. To compose is to be composed.

Department of Health Services

ARIZONA STATE LABORATORY

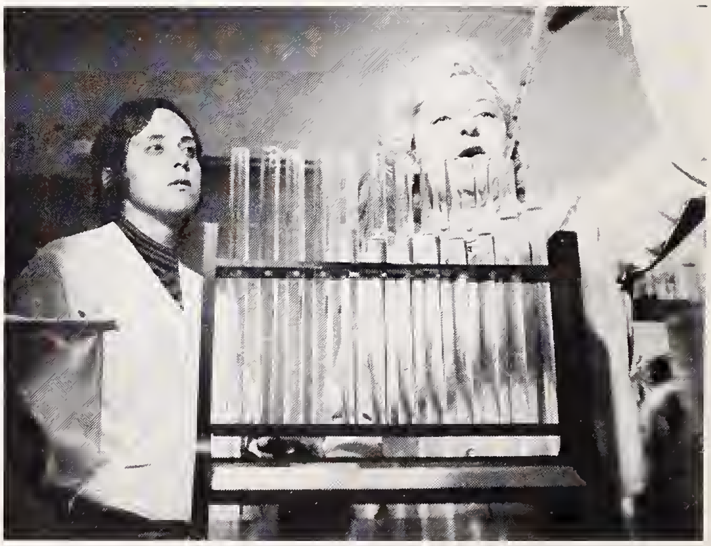
JAMES L. SCHAMADAN, M.D.

In a serious prose work titled *Cantagion,* (1546) poet-physician Girolamo Fracastoro presented the modern idea of the transmission of many diseases by "seeds" or "germs". Though much of his theory was intermingled with fantasy and mysticism, he came closer to the truth in the early sixteenth century than anyone before him and at least a century afterward. Since the discoveries of Koch and Pasteur, the importance of microbiology in the diagnosis and management of illness has steadily increased. No physician can practice or health department operate without the services of a clinical laboratory . . . and this Department is no exception.

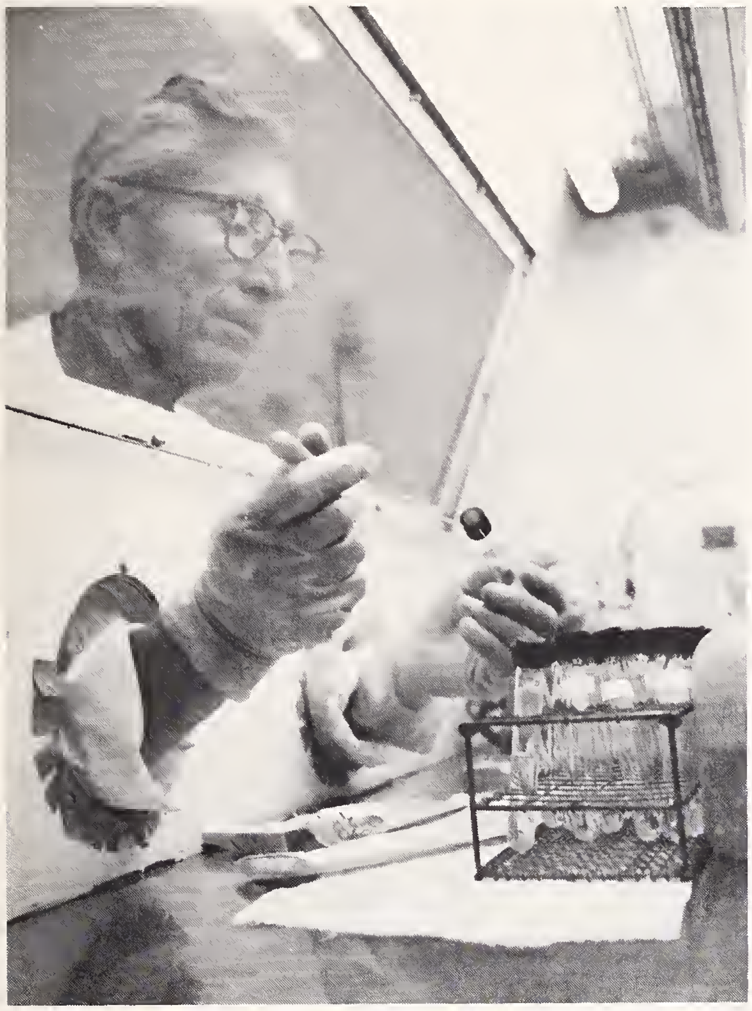
In 1912, the first Legislature of the State of Arizona passed a bill in special session establishing a state laboratory for the analysis and examination of foods, water supplies and drugs. The first lab was located at the University of Arizona in Tucson with an operating budget of $2,700. Over the years, the location of the lab has changed and the staff has grown to meet the need for new services and the expansion of existing programs. Currently, the Department of Health Services operates state laboratories at three locations: Phoenix, Tucson and Flagstaff.

The laboratory exists to carry out three primary functions. First, it acts as support service to state and county health programs. Secondly, it concentrates its resources on providing lab services not readily available in the state as well as acting as a reference microbiology laboratory for private physicians, county and state health programs, hospital and clinical labs. Finally, the lab operates a laboratory licensure program to ensure the reliability of laboratory procedures and results provided by each hospital and independent clinical laboratory in Arizona to which physicians submit specimens.

In support of state and county health pro-



Pat Adler and Dorothy Halwick are performing chemical water analysis.



John Roberts is preparing cultures for the isolation of Coccy organisms.

grams, the laboratory provides diagnostic and analytical laboratory services to assist in the diagnosis, treatment and control of acute communicable diseases, environmental contamination and other health problems. These laboratory services help to determine to what extent a population is immune or susceptible to a particular infectious disease. For example, the laboratory played a significant role in containing the diphtheria outbreak in Maricopa County and wildlife rabies in Santa Cruz County. In addition, each water and dairy supply is examined by the state lab to determine the bacteriological and chemical quality of the water and milk.

Coccidioidomycosis is one of the health problems toward which the state lab has directed research efforts. The lab has developed antigens for use in performing both the complement fixation and percipitin tests for this disease. The lab also supplies the Center for Disease Control with coccy serum for use in research. Secondly, the lab has developed and is working to improve a synthetic medium which is used to isolate C. immitis from the sputum of patients. The third area of study concerns the epidemiology of coccidioidomycosis. In a joint study with our Bureau of Air Pollution Control, air filters are being analyzed in an effort to determine the quantitative amount of coccy spores in the air in various parts of the state. The work in epidemiology is performed under the direction of H. Gilbert Crescelius, Ph.D.

Services available to physicians on a fee-for-service basis include bacteriology, mycobacteriology, mycology, serology, virology and environmental health. The laboratory no longer provides routine syphilis serology (VDRL), routine throat cultures for streptococcus, and routine examination of stools for intestinal parasites and enteric pathogens. These services were discontinued because local laboratories demonstrated their capability to provide the service. Any requests for specialized procedures that cannot be processed by our labs (e.g. phage typing, serological tests for malaria and amebiasis) will be forwarded to the Center for Disease Control, Atlanta, Georgia, for further examination.

One of the most important functions of the state lab is to administer the laboratory licensure program which provides evaluation and consultation services to hospital and private clinical laboratories. Our consultants perform on-site surveys to evaluate a laboratory's quality control program, methodology, reporting and records system, safety and sanitation, and personnel qualifications. The laboratory licensure program also sponsors workshops and seminars to continually upgrade the methodology and quality control of these laboratories.

The services of the state lab are available to you and your patients. Collection kits, instructions for collection, request forms for submitting specimens and our fee schedule may be obtained from any of the state laboratories.

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If you have any questions about our laboraory services, feel free to call Dr. Jon Counts, Assistant Director of the State Laboratory at 271-4552.

Topics Of Current Medical Interest

ARIZONA FAMILY PLANNING COUNCIL — AN INTRODUCTION AND INVITATION

For some time there has been a recognized need for an organization which would coordinate efforts being made around the state in the field of fertility regulation and family planning. A major function of such a group would be to develop an awareness of the rapidly developing changes which are occurring in family planning methods as well as to promote a better understanding of how these changes relate to both private and public sector medicine. Through the concerted efforts of a number of persons, the Arizona Family Planning Council was formed in mid-1974 to help meet these needs.

In August 1974, the Council began to establish relationships with the several "family planning programs" in the state. The Council's executive director, Emily Jenkins-Reed, has visited with the staffs of the various agencies. These visits enabled her to identify a number of areas in which non-physician staff members want and need additional training and information. A series of regional and statewide workshops is presently being planned to provide that type of training.

From the beginning the Council recognized the desirability of working with physicians whose practice encompasses family planning. There is a need to learn from the experience various practioners have gained from years of practice in order to develop the best possible policies and practice guides necessary for effective fertility regulation. When considering several means by which physicians' wisdom could be shared with the Council, it was realized means should be planned which would benefit Council members as well as local physicians. A number of physician specialists have indicated to the Council their willingness to travel to several communities in the state to allow small groups of doctors to participate in informal discussions about clinical issues which relate to human reproduction. The time and place of these meetings, insofar as possible, would be planned to take the minimum amount of time from practice. Depending upon the desires of the physicians in the communities, the cooperating physician specialist will either lead a discussion on a specific topic, or participate in an informal discussion regarding a number of different aspects of human reproduction. Such a plan would provide doctors an opportunity to discuss alternate solutions to problems of concern in the area of fertility regulation. In turn, the articulation of problems, concerns and questions will provide the Council with the information it needs to develop a useful educational program for the staffs of the several family planning programs in the state. If the discussions demonstrate sufficient interest, the Council will sponsor a regional or state-wide seminar on matters of topical interest in the field. This seminar would be designed for professionals and would feature recognized experts in the relevant specialties.

The Council offers a mechanism for sharing ideas and seeking solutions to important common problems and welcomes the opportunity to serve the Arizona medical community.

William J. Moore, M.D.
Member, Education Committee,
Arizona Family Planning Council

PROFESSIONS UNDER PRESSURE

CHARLES E. ODEGAARD

Professor of Higher Education and President Emeritus
University of Washington, Seattle, Washington

Russell Kirk, the contentious, highly articulate conservative, published in 1965 a book entitled *The Intemperate Professor and Other Cultural Splenetics.* In the preface he remarks:

> "Splenetic criticism is cross, crusty, and testy, of course; but also the adjective signifies remedies for the spleen. These studies in the afflictions of modern culture are meant as diagnosis of certain present intellectual and social discontents. Without proper diagnosis, no remedy is likely."

His purpose was remedy, and so is mine in coming to you today. You may well wonder why an outsider to your profession should accept an invitation about your business. I can only plead exposure and a sympathetic interest combined with that most noxious of attitudes, do-gooding.

My exposure to health affairs has been somewhat intense in the last dozen years, brought about by service as a public member of boards and commissions having to do with various aspects of health affairs. When I became president of the University of Washington 16 years ago, I began a repetitive association about health affairs with a dynamic and developing educational institution. Before that — as indeed since — I have had valued personal friendship with physicians. I suppose the ground work for an interest in medicine was prepared by my grandfather, a physician in Illinois who lived into my early teens, and who would take me bundled up in car robes in his open touring car, to wait for him while he engaged in what is now a lost art, house calls. He would also invite me to his office for a brief break between scheduled visits of patients to share with him a glass of sparkling soda water from the soda fountain in the drugstore below. One of the special attractions of such office visits was a look through his microscope at some interesting minute object, the microscope becoming my one tangible inheritance from my grandfather upon his death. While I never made any professional use myself of the microscope, I preserved it to the day when I sent it off to medical school with a nephew who is now a skilled and successful orthopedic surgeon. I have, then, an underelying sentimental and sympathetic interest in medicine and its related arts.

A still more eminent conservative than the contemporary author I cited at the beginning, namely Edmund Burke, regarded the sound statesman as one who combined a disposition to preserve with an ability to reform. As an outsider to your profession, I presume to speak to you as statesmen for health care who face a problem in determining what you wish to preserve and what you wish to change. In your terminology, this task requires a diagnosis in order to determine the remedy which offers some chance for improvement of health care.

When any of us faces a serious problem, one can overcome immediate emotional reactions

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Speech to Arizona Chapter, American College of Physicians and Surgeons and American Society of Internal Medicine, Scottsdale, Arizona, November 1, 1974.

and grapple with it rationally and realistically more easily if one looks beyond its immediate confines to the larger context, the societal framework, the cultural trends of the time. If in the course of making such an effort one discovers that others face somewhat similar programs, one can look at his own problem more rationally and with lessened emotional discomfort. Misery simply does love company!

Professions are under pressure for change in our society. A policeman's lot is not a happy one, Gilbert and Sullivan intoned some time ago; the media today provide ample reaffirmation of the accuracy of their observation. The old-line learned professions as well lead a more troubled life. On every hand there is evidence that respect for their authority as experts and as judges of their own performance in the practice of their arts wanes among their constituents: their parishioners, their clients, their students, their patients, their customers as it were. External pressure seems to induce internal pressure, as juniors within the ranks of the profession challenge their seniors and masters, and as conflicts arise within the profession over the policies to pursue in meeting contemporary challenges to the profession.

Within the protestant denominations the conventional seats of authority among the clergy lose their grip on the ranks of the clergy as well as the laity as controversies over policies and directions for the church arise. Even in the Roman Catholic Church in which authority for hierarchy and prestige for the clergy had seemed to be most firmly established, we see that even the papacy itself has waned, like the Dow-Jones averages, from the high water mark of the declaration of papal infallibility in 1871 to the present situation when even the bishops assert their collegial responsibility and authority for dogma and doctrine in the face of the Bishop of Rome. And the lesser clergy show a contemptuous disregard for the higher clergy unthinkable a short time ago. Meanwhile pressure from the laity, in Pope John's terminology, "updates" the church by injecting into its practice a flood of contemporary activity remote from the traditional, conservative, authoritarian church of but a short time ago.

The law until very recently seemed to be immune from the tempest of change, but there are now signs and portents that this profession has entered, more recently than medicine to be sure, a period of pressure for change accompanied by internal dissension. Lawyers and their handling of legal services are now being subjected to a variety of accusations. Their services are too costly. In an era when many have need of legal services, only the rich can afford good legal services. The poor may receive some assistance from legal aid or charitable defense, but what of its quality? The middle class is in effect forced to go without any legal assistance. Quality control for admission to the bar and to practice is weak; and professional discipline of members of the bar is faulty. Quite unlike medicine, with its plethora of specializations, the lawyers have maintained the principle, some say the fiction, of an undifferentiated bar with the result that many lawyers are allegedly ill-prepared educationally for complex and varied legal services and provide too often poor quality service. Lawyers, it is claimed, make poor use of legal assistants, at the same time that pieces of legal business are picked up by non-lawyers such as title companies, real estate brokers, and accountants with resultant guild conflicts. The current president of the American Bar Association, Chesterfield Smith, has ruffled the feathers of some of his brethren by criticisms of the availability of legal services in speeches this year. And for the first time in its history, Congress through a subcommittee of the Senate Judiciary Committee chaired by Senator Tunney, began last year an investigation of the availability and costs of legal services for the American people.

To turn to a profession with which I have had an immediate and lifetime association, that of professors, university professors in particular, they may have been a mendicant profession in the thirties, but even so they had some prestige as noble servants of the people which brought more tangible rewards in the post-war period.

Their prestige was reinforced by public awareness of their contributions to the underlying science and the technology which burgeoned in the military exploits of World War II and found further applications after the war in world-wide economic development and industrialization. Sputnik and the space race added to their reputation for a time. Even apart from those expert in science and technology, professors familiar with the sociology of management and welfare, languages and culture, and the politics and economics of other lands including even those regarded formerly as exotic, helped the outreach of the United States as a global power; hence professors were further assured for a time a large measure of public respect.

But in the last decade, the later 60's and opening 70's have certainly seen a reversal of attitudes toward professors. Within the academic community itself, students, customers of the professors, have been strident critics of what some would have thought were their betters, demanding the right to participate in judgments of faculty appoints, promotion and tenure, and of curriculum. While they have not gained all their demands, from place to place they have achieved a larger measure of influence and are heard as they were not heard before.

In this they have been helped by external critics, particularly within state government, governors, agents of the executive branch, legislators.

With every passing month, these public officials find new ways of influencing institutional internal decision-making as to funding levels, staffing in relation to numbers of students, distribution by academic ranks, course loads, eligibility for professional or sabbatical leaves, and even as to "innovative teaching." Whatever degree of immunity the institutions may have had for the internal determination of their educational programs, the old tradition of institutional autonomy is diminished daily by statewide coordination or government of the higher institutions and by their subjection to statewide regulation of purchasing, budgeting, accounting, civil service, etc., etc.

The institutions thus find themselves under a variety of constricting pressure and controls and are thus forced in turn to impose ever more reports, regulations, and limitations on professors, even as the latter feel pressure directly from their students.

It is true that what you might call the corporate practice of the teaching profession began a long time ago. Indeed it was in the 12th century that the solo practitioners of teaching of the more advanced students, in recognition of common interests, were merged into the faculties of a *university,* a word which was then a synonym for *corporatio* or *communitas,* a joint venture among individuals because of common purposes and interests. But other authorities were lurking in the background as sponsors of the academic corporation at Paris and elsewhere, the archbishop, pope, king or emperor. These sponsors were links with the public interest served by this academic corporation.

As a result of this organizational development into the corporate practice of teaching, the professors ultimately became salaried employees of the university, but they hardly thought of themselves that way, nor were they normally so regarded by the higher authorities; for they thought of themselves and were regarded as professionals, public servants to be sure; but they were left with predominant control over the method of practice of their arts of learning and teaching. The increased emphasis on new discoveries, new learnings, so-called research, stemming from Germany in the 19th century but spreading by the 20th century to many other countries including the United States, heightened the emphasis on the independence of the individual scholar-teacher, not only in the academic freedom sense, but also in the sense of his control over his teaching function. Though degrees might legally be granted by regents or trustees, responsibility for determining degree requirements, admission standards, courses of instruction, and the practical means thereof, was largely delegated *de facto* to the faculty corporately, and by it in turn in large measure to individual professors as judges of affairs in their own area of expertise.

However, the delicate respect for the individual professor or for the faculty collectively so clearly established in the first two-thirds of this century no longer comes through loud and clear from either the immediate customers for their services, the students preeminently, or from state and federal agencies, both of whom press the institutions hard for what is now increasingly called "accountability" to the public. This translates itself increasingly into intervention in the practices and erstwhile privileges of the professoriate. It still seems shocking, even if one can hardly claim totally surprising, to find that more and more professors have begun in these last several years to think of themselves as wage-earning employees, and that they ponder the possibilities of unionization and collective bargaining. This thought, new to academe, requires acceptance of an adversary stance, so different from the traditional idea that "we" professionals, professors, really are the universities and the essential masters of the academic community even if we are salaried members.

The teaching profession too is facing great challenges, and I have spent much time and effort, I can hardly say to what effect, in trying to persuade my academic colleagues to be in Burke's terms sound academic statesmen combining an ability to overcome the short-sightedness or inadequacies of our ways of carrying out our learning and teaching obligations as a means of preserving the essential elements of professional responsibilities. We will surely not preserve, in the face of public challenge of our services to society, our freedom of action as a professional privilege. We have not been admitted to a licensed artistocracy. We will retain freedom of action only by achieving repeated recognition by the public that we are rendering it a service it values, and which causes it to conclude that we can be trusted with a larger measure of self-determination of the conditions of practice of our art in its behalf. There is no firm basis for our professional freedom of action other than public recognition of the desirability and quality of our service to the public.

Indeed other groups in our society, apart from the traditional learned professions, who have come to think of themselves as experts, whether they be highway engineers or industrial developers, city planners, park and recreational experts, resource managers, or governmental officials find that they are not taken at face value in this era of participatory democracy. Most experts find themselves living in this society in an age of accountability.

Each profession finds itself then under pressure, each in its own distinctive way and in relation to its historic circumstances and present predicament; in each there is a noticeable challenge from users and critics. In our society, the usual channel through which protest or pressure for change flows is political or governmental. Because of our peculiar national history concerning the separation of Church and State, this principle may not apply much to the preaching profession, but it certainly does to the teaching profession. It is now over the horizon for the legal profession. And I hardly need tell a medical audience of government's present growing involvement in health affairs in general and the medical profession in particular.

Please note the way in which I phrased my comment: in our society, the normal channel through which protest about some service, through which criticism, complaint, or pressure for change flow, is political or governmental. When Americans begin to believe that there is something wrong in their society, they show a tendency to think that "the Government should do something about it." All too often the resulting argument advanced by the defenders concentrates heavily on the conflict over the instrument to be used, the role of government as the intermediary, whether it is benevolent or dictatorial. As a result, less attention is devoted to serious consideration of the underlying substance which gives rise to the complaint in the first place. This very neglect of the problem itself still further encourages the growing reaction: Why doesn't somebody do something about it? It then becomes easy to say, the government should do something!

I have found myself appealing to professionals to say, let's look at our house; is it in good order? Are there areas of neglect of service? Are they to costly? Are there changes in role responsibilities which would assure the public more available service, better service, and at reasonable cost? And are there false or unrealizable expectations which we should openly speak to? What can we do as professionals to change our own ways, as well as to recommend changes in others? I repeat, above all what can we do as professionals to find ways to remedy defects becoming apparent in a delivery system for service for which we in the past at least have felt responsibility and for which we have gained public acceptance, and hence for which we have been privileged to be regarded as largely self-determining experts.

I have lived with these questions for years as they relate to the academic profession, particularly to university professors as they function internally within the university, and externally in relation to other institutions, not merely with their co-workers in other colleges and universities, but also with the institutions and groups they serve — business, labor, the professions, the arts, and government itself. I will not presume to assess the results of these efforts.

I will say, however, that these questions have relevance as well for the medical profession. Here, too, the sound of battle over the instruments to be chosen for administration of health care have tended to drown out the sounds of discussion of what may be needed changes in the delivery of health care to the American people. The AMA still seems to speak importantly, if no longer as exclusively, for American medicine. Its 16-inch guns have been heard firing in Congress from the barrages on Medicare to the more scattered shooting on PSRO's. Its voice is less clearly heard on the moot matter of improved methods of delivery of health care. Under the influence of Dr. Dwight Wilbur a few years ago, the Board of Directors of the AMA did decide to establish a committee on health care for the American people. The membership began to take shape with myself as designated chairman. Better known were Judge Warren Burger, now Chief Justice of the United States, and Ann Landers. This venture unfortunately never really got off the ground.

Medicine is still probably no better organized at the national level than higher education for a go at the substantive problems of delivery of service. But this does not preclude regional and local efforts to assess the legitimacy of complaints about health services, for example to describe improved methods of delivery, and to seek revised organizational and funding frameworks for delivery of health service to all segments of society. There may indeed be residual or new roles for government action within health care, but these could be made more precise and very likely more limited by imaginative and constructive professional leadership.

By now a long laundry list of questions has arisen about the availability, cost, and character of health services which clearly do imply the possibility of changes in present styles. If the profession does not have the stomach to face changes and modification in professional practice, it seems increasingly evident that external pressures will force changes without the benefit of that professional guidance which might make for a smoother, and I am confident, better transition to modifications in the health care delivery system.

I need not take your time to describe the list. Let me only note that there is a cluster of questions having to do with interrelations among the medical specialists, the family or primary care physician and the referral system required for comprehensive care, clinic organization in other words, and the availability of such services to all groups in American society. There is a cluster of questions having to do with the physician's relation to and use of medical laboratories and hospitals, recuperative facilities, and nursing homes. There is also, I am increasingly convinced, a more serious list of questions than is fully realized yet about the drug therapy component in modern medical practice, about the information system concerning drugs themselves, their interactions and their cost, and about the availability of information concerning patients' actual use of drugs. In all these complex sets of relationships, there are serious questions about job specifications, educational preparation, delegation of responsibilities, and use of many kinds of assistants. Hanging over all these questions, and many more that will occur to you, are the questions of cost, who will pay the costs, how will they be paid, and to what extent are concerns for quality and accountability involved in the systems of payment adopted?

Reduced to the most general terms, there is a clear need, which is becoming a public demand, for preventive and comprehensive health care made available to all segments of society in an articulated, organized way which offers some chance of efficiency with both quality and cost controls. Whether this means a government administered system or some measure of government-assisted system can be mightily affected by the willingness and imagination shown by voluntary elements in our society in endeavoring to meet the need. In any case, the rising demand to fill this felt need pushes against the cottage industry inheritance of our past customs and toward larger, more complex, but articulated systems of health care delivery.

This requires physicans whose education has been concentrated since the Flexner report in biomedical sciences to think more in terms to which they are little accumstomed. As I pointed out in an address at a Boerhaave Conference at the University of Leiden in 1966, it is Flexner himself in a little noted chapter entitled, "The Proper Basis of Medical Education" who noted that the education in "the fundamental sciences" as he called them, and to which he himself devoted the great bulk of his reforming report:

> . . . furnish, indeed, the essential instrumental basis of medical education. But the instrumental minimum can hardly serve as the permanent professional minimum. It is even instrumentally inadequate. The practitioner

> deals with facts of two categories. Chemistry, physics, biology enable him to apprehend one set; he needs a different apperceptive and appreciative apparatus to deal with other, more subtle elements. Specific preparation is in this direction much more difficult; one must rely for the requisite insight and sympathy on a varied and enlarging cultural experience. Such enlargement of the physician's horizon is otherwise important, for scientific progress has greatly modified his ethical responsibility. His relation was formerly to his patient — at most to his patient's family; and it was almost altogether remedial. The patient had something the matter with him; the doctor was called in to cure it. Payment of a fee ended the transaction. But the physician's function is fast becoming social and preventive, rather than individual and curative. Upon him society relies to ascertain, and through measures essentially education to enforce, the conditions that prevent disease and make positively for physical and moral well-being. It goes without saying that this type of doctor is first of all an educated man.

Much as we are indebted for improved care of disease to Flexner and those who implemented the curriculum he described and who elaborated it into the predominant pattern of education for physicians which endures to this day, we should recognize that this perspective on medical education is insufficient and that we have not coasted into that day when the physician's function is social and preventive as well as individual and curative. Given the pattern of preparation of physicians, they are not well-prepared to grapple with two dimensions of health care which are more and more apparent in public demands. I described these two dimensions at Leiden in 1966 as follows:

> People come into hospitals and outpatient clinics and exist in their homes and in places of work and of other activity not only with bodies similar to those of animals but with memories; hopes; fears; aspirations; senses of achivement and of failure; loves; hates; and capacities for self-expression, social interaction, cultural behavior, and artistic play; and we know that all these human qualities can and do affect those same tissues and organs with which the biologist is familiar; and vice versa. Man belongs not only to the animal world observed by the biologist. He is, as the philosopher has observed, a social animal, and as the novelist has described, a creature of affect. The physician who is educated to see his patient as only a collection of interrelated tissues and organs is not seeing his patient whole; and, except as he may be aided fortuitously by untutored intuition, he will not be able to deal with his patient's health in all its aspects.
>
> Even as the physician should be prepared to deal with the biological, social, and emotional aspects of his patient's life if he is to help preserve or restore the latter's health, in yet another sense he is in need of deep social insight. Under the merging circumstances of the present, if the physician is to retain his customary role, he must see himself also as a participant and a social administrator in an ever more complex social structure designed to provide health care in a comprehensive and continuing manner for an ever larger proportion of the population. He must be not only a practitioner of applied biology; he must also be a practitioner of applied social science if patients are to be guided by him through the interrelated specializations and institutions of a modern health care industry. These two needs, seeing the individual patient whole and guiding the sociological and technological development of appropriate health care facilities, are very demanding.

There is another irony in the fact that medicine, as other professions, because of their very achievements, now find themselves challenged. Peter Druker in *The Age of Discontinuity* endeavors to find, as he says in his subtitle, *Guidelines to Our Changing Socity.* The professions are an important part of, they have helped to make ours, "the knowledge society." He affirms, "The central *moral* problem of the knowldege society will be the responsibility of the learned, the men of knowledge." And, "Historically, the men of knowledge have not held power, at least not in the West. . . . But now knowledge has power." And, "The learned are no longer poor. On the contrary, they are true 'capitalists' in the knowledge society."

But power and wealth impose responsibility.

The learned may have more knowledge than the rest of us, but learning rarely confers wisdom. It is, therefore, not too surprising that the men of knowledge do not realize that they have to acquire responsibility fast. They are no different from any other group that ever before entered into power. They too believe that they owe their position to their virtue and need no other justification than the "purity of their intentions." They too believe that anyone who questions their motives must be either fool or villain, either "anti-intellectual" or "McCarthyite." But the men of knowledge, too, will find out that power can be justified only through responsibility.

The men of knowledge will find it hard to accept that the basic decisions on knowledge are political decisions rather than knowledge decisions and therefore not in their hands. They will find it even harder to swallow that we will hold them responsible for these decisions, even though they do not control them. Yet unless they accept this, they will not have much say in these decisions. The decisions have to be made. The only choice open to the men of knowledge is whether to take part in them responsibly or have them imposed by somebody else.

We will also demand of the men of knowledge a high code of morality. This demand will come as an even ruder surprise to the learned. They have always prided themselves on their objectivity and on the morality of science. They tend to consider themselves repositories of virtue. But what may have been perfectly adequate as private morality as long as knowledge had no power is rather irrelevant for a group in power.

Indeed the men of knowledge are today where businessman was in the late nineteenth century with his assumption that the morality of business was his "private affair." For a group in power the facile assumption of moral righteousness — if only the heart be pure and the cause just — is crass immorality.

Physicians are, of course, not the only knowledge workers in our society who have power and wealth, which bring as well heavy responsibilities. But questions about the comprehensiveness, quality, cost, efficiency, and availability of health care services and about the wisdom in the present system or lack of system are in the air and are inevitably directed toward your profession. They are leading to increased probabilities of intrusion into professional responsibilities of the physician. Defense of the status quo is not enough. The sound statesman must combine a disposition to preserve with an ability to reform, to recommend changes to overcome deficiencies in a context in which good achieved in the past is also preserved. This call for a high level of self-inspection as well as realistic assessment of others. It requires imaginative invention of altered relationships among related professionals and subprofessionals in obviously more highly articulated systems.

At a time like this, one's own attitude toward change, change even in one's own ways as well as for others, is of cardinal importance. To avoid society's falling into the rigidity of ever more rules and regulations, the margin for individual judgment in complex affairs should be kept. But it can be kept only if those who endeavor to prepare themselves for high responsibilties do not forget the vow for service, the oath, the *professio* which in the first case causes them to be called professionals, which should give them the courage to be self-critical as well as critical of others in the search for better and more accepted modes of service.

As a profession, you are now facing great challenges, great pressures for change, not all of which may represent the right solutions. To distinguish the better from the worse or to find still better alternatives will not be easy. At this juncture, true leadership will have to come up with far more than business as usual.

What I have tried to suggest to you sympathetically is that you are not alone among professionals in facing challenge to your authority. Society is asking for still better service to more people, health services, legal services, educational services. Whatever past success we think we have achieved, we are not being allowed to rest on our laurels. But think of it, things could be worse, there is another alternative! Society is not asking less of us — it is asking more of us. It visits upon us not neglect, but demand! The alternative presented to us is really, how can we do our job better? If we keep our sense of professional obligation strong, we will participate in finding ways to improved service and retain or regain professional responsibility and respect for our professions.

ArMA
Medical History

UNIQUE REPORTS ON PIONEER SURGERY

AUDREY DAVIS STEVENS[†]

Unique case histories of early surgery make for interesting reading. Starting in the East and moving West with our frontiersmen, such case histories of self-performed surgery and emergency surgery seem today almost unbelievable.

On January 14, 1794, Dr. Jesse Bennett performed a succeessful caesarean operation and oophorectomy upon his wife. The operation table consisted of a plank table held up by two barrels. The anaesthetic was opium. For sutures he used linen thread. His assistants were two of his devoted women slaves. The daughter lived to be 77. Mrs. Bennett also lived many years thereafter. In the writer's opinion, Dr. Bennett should be given the credit for performing this type of surgery first instead of Dr. Ephraim McDowell. The difference in fame, in this case, is that Dr. Bennett did not report his surgery until years later, and Dr. McDowell reported his case immediately.

An interesting side-note in this case was that the female cats in the Bennett neighborhood were not multiplying . . . as Dr. Bennett practiced on the cats for months before he performed the surgery upon his wife.

The first reported case of a self-performed caesarian section in the United States was in 1882. The patient was a fourteen-year-old girl. The place was in a snowdrift in Nassau, New York. The birth consisted of twins, with one of the two arriving naturally. This child she buried in the snow. To hasten the arrival of the second child, she made an L-shaped incision with a razor. Dr. Bassett (initials unknown to the writer) was called in to make the necessary repairs, and the young unhappy mother recovered.

Maxine O. Dellinger in *The History of Abdominal Surgery in New Mexico* reported a case of self-surgery performed in that state. Vanity was actually the reason for the self-surgery as Dr. T. B. Fest was tired of the ribbing he was receiving because of his protruding stomach. He decided to operate upon himself and thereby remove the fat. Unfortunately he became frightened, after giving himself a local anesthetic, and two of his colleagues, Dr. E. H. Crail and Dr. H. M. Smith, had to complete the surgery. Seven pounds of fat were removed, and Dr. Fest was a bit happier with his appearance.

Dr. George Goodfellow received more publicity about his activities than any doctor in Arizona. This is partly, but not entirely, the reason he is the most well known of all Arizona's pioneer physicians. When Dr. Goodfellow started practicing at Fort Whipple, he was not as highly thought of as a physician and surgeon as he became in Tombstone. There are three reasons for this improvement in his success. He worked with a very smart older surgeon in Tombstone by the name of Dr. H. M. Mathews, his newspaper reports were full of praise and he also became Tombstone's coroner. The latter was very important as this made it possible for Dr. Goodfellow to never completely lose the benefits of his labor because of the death of life of his patients. By performing post-mortem dissections upon the death of his patients, he learned to improve this technique. Dissections for most surgeons were not legally possible nor as easily available.

[†] Deceased

The newspaper reports on the activities of Dr. Goodfellow were plentiful, enthusiastic and at times more than a trifle garbled. *The Tombstone Prospector* of June 5, 1888 tells of self-surgery Doctor performed and reads: "From Tim Griffith, who returned yesterday from Sonora, the Prospector learns that Dr. Goodfellow in the accident referred to in a late issue of this paper, broke both bones of his right arm, and severely lacerated one of his legs. He set his arm and sewed up the cut on his leg as best he could, and at the time Griffith left Arispe he was confined to his bed and said he was doing the best he could for himself under the circumstances, which we imagine are not the most pleasant, even to a man as plucky as the Doctor."

In an emergency not only skill was required by the pioneer physician, but imagination and daring played an important part in successful surgery. Dr. Warren E. Day of Camp Verde was sent to take care of a victim of an Indian skirmish by the name of Captain King, later promoted to Brigadier General King. The patient had a compound fracture of the left arm between the elbow and the shoulder. Captain King at gunpoint refused to let Dr. Day amputate his arm, so Dr. Day "mashed an old cigar box and made splints of it, bandaged the arm carefully" and took care of Captain King until he was fully recovered. However, it was eight or nine years before the arm finally healed.

One of the most outstanding early surgeons of this century was Dr. Alexander M. Tuthill. When he practiced in Morenci, he occasionally found himself arriving at a patient's house with the wrong information and therefore the wrong equipment. Being a resourceful man, he was known to use such substitutes as a "potato masher, screwdriver, nails, etc."

A similar case history occurred in Tulare County, California and caused such a divided opinion among the members of the society Dr. W. W. Cross moved to Oakland, California, where he enjoyed a fine and reputable practice. The successful appendectomy in question was performed in the remote mountain area, with lack of time and lack of proper equipment involved. Dr. Cross used pocket knives, spoons, etc. that he had available.

Such criticisms as that mentioned in the above paragraph have regretably cramped the telling of other doctors' daring. For example, this writer has heard of another physician who lost his instruments in a flash flood. When he did get to the patient's home, he realized that an immediate appendectomy was needed. He used the butcher knife of the lady of the house to make the incision; and to soothe the patient's relatives who were observing the operation, he marked the depth of the knife for the incision by tying a boiled rag around the table. The appendix needed to be drained, and he boiled and used some rather old lamp wicks to pack the cavity and left it to drain. The patient was very grateful, and since the story was never made public, the good daring physician was not criticized.

However, one pioneer physician should not have been so over confident. A report on a oopherectomy, at that time called "ovarotomy," was reported in *The Pacific Medical and Surgical Journal,* Volue III, 1860 and reads: "Ovariotomy was performed in this city, in which an original and striking method of disposing of the intestines was practiced. The intestines were laid out on the table on each side of the patient during the removal of the tumor. The incision was conveniently ample, extending from sternum to pubis, save perhaps an inch or two at each end of cut. Is it astonishing that American surgeons are called 'butchers' when such diabolical modes of operating are practiced in open day? There could be but one result to an operation of such magnitude, so recklessly and unskillfully and unscientifically performed. Notwithstanding brandy, ammonia, et id, &c., and electricity — the unfortunate victim to this outrage, under the mantle of surgery, died in a few moments."

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Letters to Editor

November 21, 1974
John R. Green, M.D., Editor
Arizona Medicine
Dear Doctor Green:

Our sincere thanks for the article and picture regarding our new Arizona State Association of Physician's Assistants in the November issue.

We are especially grateful to Mr. Robinson, Mr. Barnett, the staff of Arizona Medicine and the Arizona Medical Association for their assistance and labors in behalf of the Physician's Assistants concept of health care here in Arizona.

Sincerely,
Buddy Woolbright, P.A.
Vice President
Arizona State Association
of Physician's Assistants

November 21, 1974
John R. Green, M.D.
Editor-In-Chief
Arizona Medicine
Dear Dr. Green:

I was a bit chagrined in reading the article "Tsutsugamushi Fever in Arizona", to see the list of "usual" antibiotics given to the patient with a sore throat — all without a throat culture. Additionally, the diagnosis of scrub typhus can be made more definitively with complement fixation tests, rather than the less accurate Weil-Felix reaction.

I think I can understand what a big job it is to put *Arizona Medicine* out monthly. Frankly, I read and enjoy it immensely. This particular article, however, made me wonder if the manuscript received sufficient prepublication scrutinizing.

Since I am now probably cast with the "carpers", I'd be glad to talk with you further about this and help in any way I can.

Sincerely,
Kipp Charlton, M.D.

EDITOR'S NOTE: The comments are appreciated. The article in question was carefully reviewed by an expert in the field prior to publication in *Arizona Medicine.* Sometimes even experts do not agree. JRG

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

HEALTH MANPOWER COMMITTEE

The meeting of the Health Manpower Committee of the Arizona Medical Association, Inc., held November 20, 1974 at 810 West Bethany Home Road, Phoenix, Arizona convened at 6:46 p.m., Louis C. Kossuth, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting held July 17, 1974 were approved as distributed.

SECTION ON RURAL AND MIGRANT HEALTH

Dr. Nichols and Dr. Kossuth reviewed the background of moving the Sub-committee on Rural and Migrant Health from the Professional Committee to the Health Manpower Committee. Dr. Nichols then explained to the Committee the activities of his Section since its inception.

Placement Service

It was moved and carried to continue to expand the Association's Placement Service to include physicians' assistants and nurse practitioners.

It was recommended that staff meet with representatives of the newly created Arizona State Association of Physicians' Assistants and representatives of the Nurse Practitioners to determine the best format.

Physicians' Assistant and Nurse Practitioner Policy Statement

It was moved and carried to recommend to the Board of Directors that the Association approve, as a matter of policy, the experimental use of physicians' assistants and nurse practitioners, under the supervision of physicians, in rural areas of Arizona.

MEDEX Workshop

Dr. Kossuth reviewed the "Progress Report on Medex Programs in the United States (1969-1974)" as submitted by the University of Utah Medical Center. This 47-page document is available at the Association offices.

It was moved and carried to recommend to the Board of Directors that the Association co-sponsor a workshop by the University of Utah MEDEX program, to be planned and executed by representatives of MEDEX and the Association's Health Manpower Committee. The purpose of the workshop is to explain the role of the physician's assistant and nurse practitioner in an organized multi-faceted health program. The proposed workshop to be held in the spring of 1975. There would be no financial obligation to ArMA.

Arizona Health Service Corps

It was moved and carried to recommend to the Board of Directors that the Association approve the "objective" of the "Arizona Health Service Corps" plan, thereby making it possible for the Health Manpower Committee to proceed with developing grant applications, plans, etc. for subsequent review by the Board of Directors prior to implementation.

"OBJECTIVE: The objective of the present proposal is, quite simply, to bring together Arizona Rural Health needs and resources in the most effective manner possible. It is proposed that this might be done through the establishment of an Arizona Health Service Corps, to be modeled upon the National Health Service Corps, but to extend beyond the objectives of the latter program. Specifically, the AHSC would provide a vehicle through which retired physicians, physicians extenders, recent medical graduates, Indian health or migrant health physicians and private practicing physicians may be brought together in the service of Arizona's rural population. This would be for the purpose of meeting the needs of isolated rural areas, to include Indian Reservations, agricultural regions populated primarily by seasonal farm laborers and sparsely inhabited state or Federal lands with their seasonal influx of both out-of-state and Arizona tourists."

Educational Programs Re: Physicians' Assistants and Nurse Practitioners

Mr. Robinson reported that a panel discussion entitled "The Physicians' Assistant and Nurse Practitioner — How To Use Them" is scheduled as part of the 1975 Annual Meeting as requested by this Committee.

It was also reported that RMP continues to be involved in educational activities regarding the use of Physicians' Assistants and Nurse Practitioners.

PHYSICIANS' ASSISTANTS SURVEY

As a result of the actions of the Committee at its last meeting a survey of physicians who have PA's was conducted asking the following questions:

1. Briefly, how long have you had and how do you use your Physician's Assistant?
2. Has the Physician's Assistant increased the amount and quality of care you can deliver?
3. Does the Physician's Assistant meet your expectations in assistance? Would you recommend any change in his training?
4. Would you consider using a Physician's Assistant who would be located ten or more miles from your office, with telephonic communication and regularly scheduled visits on your part?
5. Does your Physician's Assistant function in the hospital setting, and if so, did you have any problems arranging this with the hospital staff?
6. Would you recommend your Physician's Assistant to your colleagues?

Of eight physicians survey, six responded in varying degrees and length making it difficult to statistically arrange. One general theme ran throughout all responses; namely, that the Physician's Assistant is a valuable adjunct to the physician, increasing in value as time passes and experience is gained. All said that they were very pleased to have taken this step.

Blue Shield Action

It was noted that Blue Shield had two recent requests for ways to reimburse for the use of PA's. One request resulted in the appointment of a committee to investigate the matter and the other request was not approved.

Education Programs for Physicians' Assistants

Mr. Robinson briefly reviewed the AMA document "Educational Programs for the Physician's Assistant — Summer/1974." He noted that there are 2,638 PA programs as of March 20, 1974 in 24 different areas.

AIR TRANSPORT

Drs. Nichols, Miller and others reviewed many aspects of the Air Transport Program as presented by Mr. Frank Anders at the last meeting. It was pointed out that Mr. Anders might be coming to Arizona next summer and volunteered to investigate this program further for the Committee. It was suggested that Dr. Melick might function as his preceptor.

It was moved and carried to approve further investigation of this project utilizing the existing section consisting of Drs. Abrams, Miller, Spanier who would use the section on Rural and Migrant Health as needed.

Limited License Program

PHYSICIAN DISTRIBUTION

Mr. Robinson reported that as of August 5, 1974, 44 limited licenses had been issued. Twenty-one have since received their regular licenses, three have moved out of state and 20 are still on "limited" status. Of the 20, 14 are serving in rural areas.

Critical Health Manpower Shortage Areas

HEW has published a list of shortage areas (Federal Register October 23, 1974) for the purpose of assignment of the National Health Service Corps personnel. Arizona areas are: Apache County; Cochise County, the medical trade area of Benson and town of San Simon; Navajo County and Pima County, the town of Marana.

1975 Project Medix Index

Mr. Robinson reviewed the subject program by the Andromedix organization. They intend to publish lists of openings available around the country for physicians who are seeking location. RECEIVED.

Doctors of Medicine Distribution in Arizona at October 31, 1974

Apache County	
Fort Defiance	3
Ganado	3
McNary	1
Pinetop	4 (3R)
Springerville	3
Window Rock	1
TOTAL	15 (3R)
Cochise County	
Bisbee	8 (1R)

Douglas	15	
Hereford	1	
Pearce	1	
Sierra Vista	13	
Tombstone	1	(1R)
Willcox	2	
Portal	1	
TOTAL	42	(3R)
Coconino County		
Flagstaff	50	(3R)
Grand Canyon	1	
Kayenta	1	
Page	3	
Sedona	7	(1R)
West Sedona	1	
Williams	3	
TOTAL	66	(4R)
Gila County		
Claypool	1	
Globe	8	(1R)
Hayden	1	
Miami	10	
Payson	3	
Pine	1	
TOTAL	24	(1R)
Graham County		
Fort Grant	1	
Safford	9	
TOTAL	10	
Greenlee County		
Morenci	9	
TOTAL	9	
Maricopa County		
Buckeye	3	
Carefree	3	
Cave Creek	2	
Chandler	10	
Glendale	29	
Goodyear	1	
Litchfield	2	
Mesa	133	(3R)
Paradise Valley	4	(1R)
Peoria	1	
Phoenix	1449	(39R)
Scottsdale	186	(12R)
Sun City	118	(27R)
Tempe	68	(2R)
Tolleson	1	
Tonopah	1	(1R)
Wickenburg	5	
Youngtown	11	
TOTAL	2027	(83R)
Mohave County		
Kingman	15	
Lake Havasu City	11	
Riviera	1	(1R)
TOTAL	27	(1R)
Navajo County		
Holbrook	2	
Lakeside	4	(1R)
Show Low	1	
White River	5	
Winslow	3	
TOTAL	15	(1R)
Pima County		
Ajo	7	
Green Valley	4	(2R)
Marana	1	
Sells	1	
Tucson	898	(26R)
TOTAL	911	(28R)
Pinal County		
Apache Junction	3	
Casa Grande	13	
Coolidge	7	(1R)
Eloy	1	
Florence	12	
Kearney	3	
San Manuel	5	
Superior	4	
TOTAL	48	(1R)
Santa Cruz County		
Elgin	2	(1R)
Nogales	9	
Patagonia	1	
Tubac	3	(3R)
Tumacacori	1	
TOTAL	16	(4R)
Yavapai County		
Bagdad	2	
Camp Verde	1	
Cottonwood	6	
Prescott	46	(3R)
Yarnell	1	
TOTAL	56	(3R)

Yuma County	
Parker	2
Wellton	1
Yuma	5
TOTAL	58

GRAND TOTAL – Active State of Arizona	3324
OUT-OF-STATE	2613
MILITARY	123
TOTAL	6060

*(R) – indicates the number retired.

CREDIT EQUIVALENCY BETWEEN COMMUNITY COLLEGES AND UNIVERSITIES AS IT RELATES TO THE NURSING PROFESSION

Questions had been raised at the last meeting relating to the subject. An investigation was undertaken to determine the facts from Arizona State University, Northern Arizona University and the University of Arizona. Responses have been received from all three. It was noted that an "Arizona Higher Education Course Equivalency Guide" has been developed, examination of which supports the thought that transferring from two-year colleges can be very complicated and result in not having portions of the credits accepted at the four-year college. RECEIVED.

RURAL PHYSICIAN SURVEY

Mr. Robinson reported that the Board of Directors did approve this Committee's recommendation for approval of Thomas J. Stewart, M.D.'s request for endorsement of a survey of physicians in rural parts of Arizona. RECEIVED.

ArMA/ARMP RECRUITMENT PROGRAM

Mr. Ted McFarlan reported that a meeting of the statewide work group has been held. He reported on the ongoing programs in Williams, Winslow, Globe, Quartzite, Coolidge, St. Johns, Ganado, Bowie, Dolan Springs and others. Many successes have resulted; some programs not so successful.

He reported on a new program of Residents meeting with community representatives in hopes that they would be interested in locating in the communities permanenlty. Mr. McFarlan is to report further on this at the next meeting.

Meeting adjourned 9:16 p.m.

William E. Crisp, M.D.
by
Bruce E. Robinson
Executive Director

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

GOOD SAMARITAN HOSPITAL, PHOENIX
MARICOPA COUNTY GENERAL HOSPITAL. PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

MEDICAL EMERGENCIES

January 15, 1975
1 p.m., Mohave C.C. Extension Class
Lake Havasu, Az.

7:30 p.m., Mohave C.C. Mohave Valley Campus
Bullhead City, Az.

SPONSOR: U of A Office of Vice President for Health Sciences (Phoenix Office)

CONTACT: Douglas H. Lindsey, M.D.
U of A College of Medicine
Tucson, AZ 85724

Approved for 2 required hours per session toward the ArMA Certification in Continuing Medical Education.

PRESCOTT VETERANS ADMINISTRATION CENTER CONTINUING MEDICAL EDUCATION PROGRAM

1:30 p.m., Building 28, VAC, Prescott, Az.

January 9 – Cardiology Conference
January 16 – Thyroid Function Tests
January 23 – Discussion of Ambulatory Care
January 29 – Pulmonary Disease Rounds
January 30 – Pulmonary Disease Rounds

SPONSOR: Veterans Administration

CONTACT: Charles A. Trahern, M.D.
Coordinator, Continuing Medical Education
Veterans Administration Center
Prescott, AZ 86301

Approved for 1½ required hours per session toward the ArMA Certificate in Continuing Medical Education.

SKI INJURIES AND FOREARM FRACTURES

January 16, 1975
7:30 p.m., Navapache Hospital, Lakeside, Az.

SPONSOR: Office of Vice President for Health Sciences, U of A (Phoenix Office)

CONTACT: Sidney L. Stovall, M.D.
Robert E. White, Jr.
2620 N. 3rd St.
Phoenix, AZ 85004

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education

THE SIXTH ANNUAL TUCSON SEMINAR OBSTETRICS & GYNECOLOGY

January 16, 17, 1975
U of A College of Medicine, Tucson, AZ
Medical Center Auditorium

SPONSOR: U of A Dept. of OBGYN

CONTACT: C. D. Christian, M.D.
U of A Medical Center
Tucson, AZ 85721

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

THIRD ANNUAL SURGICAL SYMPOSIUM

January 19, 24, 1975
Sheraton Scottsdale, Scottsdale, AZ

SPONSOR: Phoenix Surgical Society, Tucson
Surgical Society and U of A
College of Medicine

SPONSOR:
Phillip Saba, M.D.
4550 North 51st Ave.
Phoenix, AZ 85031

Approved for 28 required hours toward the ArMA Certificate in Continuing Medical Education.

DRUG INTERACTION, PART I

M. J. Lawrence Mem. Hospital, Cottonwood, AZ
7 p.m., January 23, 1975

SPONSOR: U of A Office of Vice President for
Health Sciences (Phoenix Office)

CONTACT: William Hardigan, Ph.D.
College of Pharmacy
U of A
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

PERINATAL RISK: DETECTION, PREVENTION AND TREATMENT OF CONGENITAL DISORDERS

January 23, 24, 25, 1974
Ramada Inn, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT: Louise Warrick, R.N.
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 16½ required hours toward the ArMA Certificate in Continuing Medical Education.

SECOND ANNUAL SYMPOSIUM BARROW NEUROLOGICAL INSTITUTE

January 23-25, 1974
Camelback Inn, Scottsdale, AZ

SPONSOR: The Barrow Neurological Institute
of St. Joseph's Hospital & Medical Center

CONTACT:
Richard A. Thompson, M.D.
Division of Neurology
Barrow Neurological Institute
St. Joseph's Hospital Medical Center
350 W. Thomas Road
Phoenix, AZ 85013

Approved for 15 required hours toward the ArMA Certificate in Continuing Medical Education.

EIGHTEENTH ANNUAL CARDIAC SYMPOSIUM

January 24, 25, 1975
Scottsdale Hilton Inn, Scottsdale, AZ

SPONSOR: American Heart Association,
Arizona Affiliate

CONTACT:
Brendan Phibbs, M.D.
1720 East McDowell Road
Phoenix, AZ 85006

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

FAMILY THERAPY AND CHILD ADVOCACY

January 24, 25, 1975
Arizona State Univ., Tempe, AZ

SPONSOR: American Orthopsychiatric
Association

CONTACT: Aliki Coudroglou, Ph.D.
ASU Graduate School of
Social Services Administration
Tempe, AZ 85281

Approved for 14 elective hours toward the ArMA Certificate in Continuing Medical Education.

MANAGEMENT OF LOW BACK PAIN

January 25, 1975
8:30 a.m., St. Mary's Hospital, Tucson, AZ

SPONSOR: Arizona Society of Physical Medicine
and Rehabilitation

CONTACT: Stuart I. Holtzman, M.D.
St. Mary's Hospital
P.O. Box 5386
Tucson, AZ 85703

Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

SYMPOSIUM ON HEAD & NECK CANCER

February 8, 1975
Good Samaritan Hospital, Phoenix, AZ
Sexon Hall Auditorium

SPONSOR: American Cancer Society, Maricopa County Unit & Division of Oncology, Good Samaritan Hospital

CONTACT: Gabriel deFreitas, M.D.
c/o American Cancer Society
Prof. Ed. Comm.
4700 N. 12th St.
Phoenix, AZ 85014

Approved for 5 required hours toward the ArMA Certificate in Continuing Medical Education.

FRONTIERS IN OPHTHALMOLOGY

February 6, 7, 8, 1975
Scottsdale Hilton, Scottsdale, AZ

SPONSOR: Rockefeller & Abbie Prentice Eye Institute of St. Luke's Hospital Medical Center

CONTACT:
Louis Rosenbaum, M.D.
500 E. Thomas Road
Phoenix, AZ 85012

Approved for 18 required hours toward the ArMA Certificate in Continuing Medical Education.

REVIEW COURSE IN INTERNAL MEDICINE

Weekly on Wednesdays, 5 p.m.-6:30 p.m.
at participating Hospitals listed below
February 5 - June 4, 1975

SPONSOR: Departments of Medicine, Good Samaritan Hospital, Maricopa County General Hospital and St. Joseph's Hospital

CONTACT: D. J. Crosby, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

PEDIATRIC ALLERGY

February 8 & 9, 1975
Tucson, AZ

SPONSOR: U of A, American Academy of Pediatrics, AAFP

CONTACT: Hugh Thompson, M.D.
U of A, Dept. of Pediatrics
Tucson, AZ 85724

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

EIGHTH ANNUAL SOUTHWESTERN CLINICAL PHARMACY SEMINAR

February 14-16, 1975
Braniff Place Hotel, Tucson, AZ

SPONSOR: College of Pharmacy, U of A

CONTACT: William D. Hardigan, Ph.D., Dir.
Pharmacy Extension
U of A
Tucson, AZ 85721

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

THE 1975 INTERNATIONAL MEDICAL-DIETETIC SYMPOSIUM

February 28, 1975
U of A College of Medicine, Tucson, AZ

SPONSOR: U of A College of Medicine, Nutrition Council of Arizona and Republic of Mexico.

CONTACT: Otto Sieber, M.D.
Dept. of Pediatrics
Arizona Medical Center
Tucson, AZ 85724

ROCKY MOUNTAIN NEUROSURGICAL SOCIETY

June 12, 13, 1975
Cozumel Island, Yucatan Peninsula, Mexico

ARIZONA STATE SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING

March 1, 1975
Scottsdale Hilton, Scottsdale, AZ

SPONSOR: Arizona State Society of Anesthesiologists

CONTACT: Eldon S. Reed, M.D.
3625 N. 16th St.
Phoenix, AZ

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

SYMPOSIUM ON INFECTION CONTROL

March 20 & 21, 1975
Ramada Inn, Phoenix, AZ

SPONSOR: Assoc. for Infection Control, Arizona Dept. of Health Services, and Center for Disease Control at Atlanta, Ga.

CONTACT:
Sonia J. Burns, R.N.
3923 S. Willow Drive
Tempe, AZ 85282

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

ARTHRITIS SERVICES PROGRAM

April 5, 1975, 9 a.m.-4 p.m.
Arizona Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program,
U of A College of Medicine

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

ARIZONA MEDICAL ASSOCIATION 84TH ANNUAL MEETING

April 22-26, 1975
Braniff Place Hotel and Tucson Community Center
Tucson, AZ

SPONSOR: Arizona Medical Association and
Northwestern University

CONTACT:
Donald J. Ziehm, M.D.
Program Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

VECTORCARDIOGRAPHY — A BASIC WORKSHOP

April 30-May 2, 1975
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: American College of Cardiology,
Institute for Cardiovascular
Diseases, Good Samaritan Hospital

CONTACT:
Alberto Benchimol, M.D.
Institute for Cardiovascular Diseases
1033 E. McDowell Rd.
Phoenix, AZ

TENTH ANNUAL MEETING ROCKY MOUNTAIN NEUROSURGICAL SOCIETY

June 8-11, 1975
Cozumel Island, Yucatan Peninsula, Mexico

June 12-13, 1975
Post Convention Seminars, Pan-American Hotel
Merida, Yucatan Peninsula, Mexico

SPONSOR: Rocky Mountain Neurosurgical Society

CONTACT: Richard H. Moiel, M.D., Secretary
Rocky Mountain Neurosurgical Society
601 Medical Towers, 1709 Dryden St.
Houston, Texas 77025

PHYSICIANS TRAINING PROGRAM AS PART OF ARTHRITIS SERVICES PROGRAM

July 1, 1974 - June 30, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: Arizona Medical Center and
Arthritis Services Program

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS MEDICAL & SURGICAL

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Departments of Medicine, Family Practice,
and Surgery

CONTACT: Jack D. Nestor, M.D.
Clinical Laboratory
1601 W. St. Mary's Rd.
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

PHOENIX PSYCHIATRIC COUNCIL CONTINUING EDUCATION PROGRAM

September 1974 — May 1975

SPONSOR: Phoenix Psychiatric Council

CONTACT:
Robert H. Barnes, M.D.
525 N. 18th St.
Phoenix, AZ 85006

Approved for required hours per session toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St. Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC., ORGANIZED 1892, 810 W. BETHANY HOME ROAD, PHOENIX, ARIZONA 85013.

OFFICERS AND DIRECTORS – 1974-1975

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President-Elect–William C. Scott, M.D.	U. of A. College of Medicine, Tucson 85724
Vice President–Edward Sattenspiel, M.D.	333 W. Thomas Rd., Phoenix 85013
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Past President–Philip E. Dew, M.D.	P. O. Box 1911, Tucson 85702
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Alternate Delegate to AMA–W. Scott Chisholm, Jr., M.D.	1158 E. Missouri Ave., Phoenix 85014
Alternate Delegate to AMA–John J. Standifer, M.D.	412 E. Oak St., Kingman 86401

DISTRICT DIRECTORS

Central District–George L Hoffmann. M.D.	438 W. 5th Place. Mesa 85201
Central District–James M. Hurley, M.D.	3143 N. 32nd St., Phoenix 85018
Central District–David C. James. M.D.	926 E. McDowell Rd., Phoenix 85006
Central District–Wallace A. Reed, M.D.	1040 E. McDowell Rd..Phoenix 85006
Central District–Lawrence J. Shapiro, M.D.	550 W. Thomas Rd., Phoenix 85013
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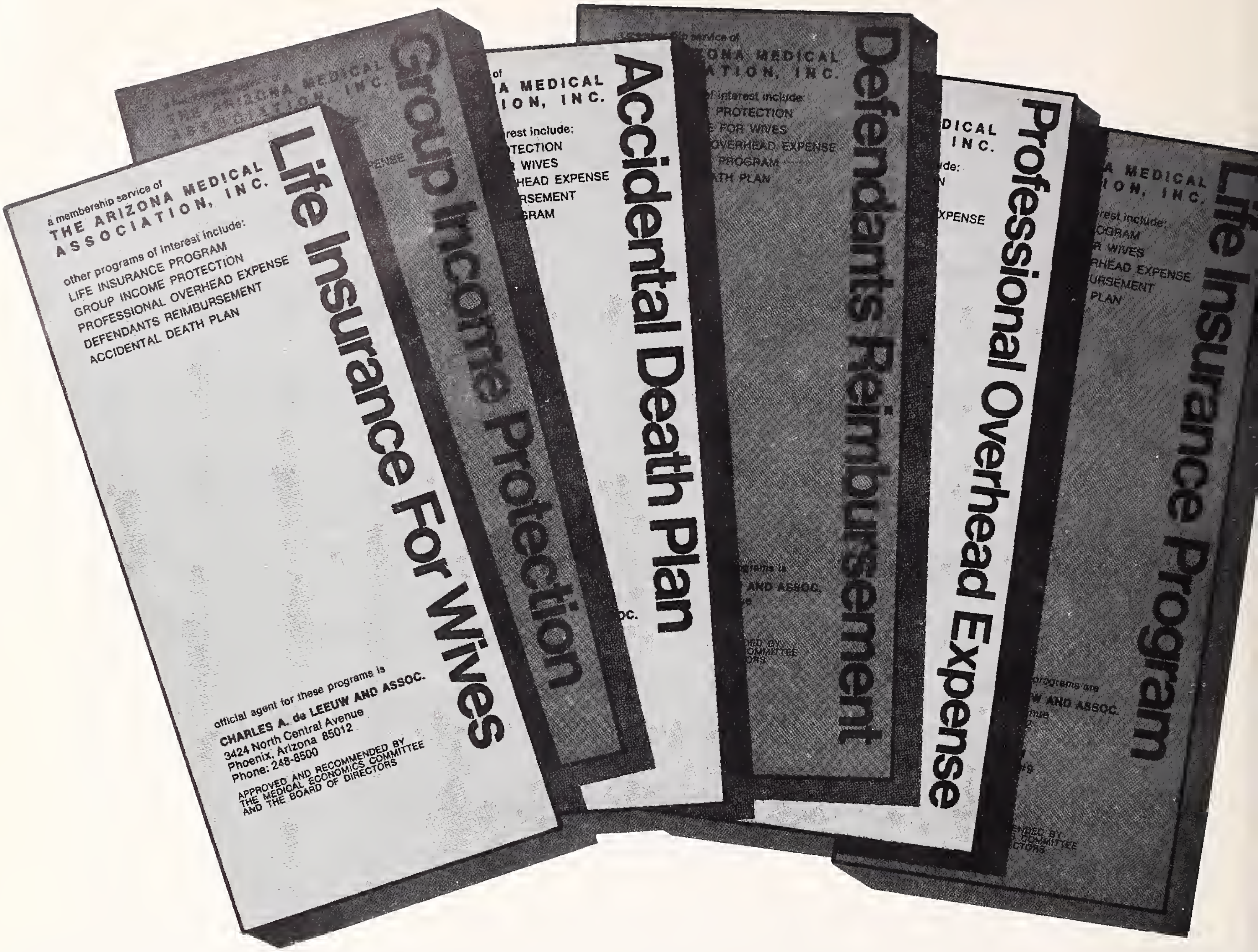
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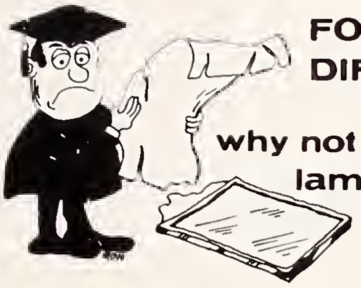

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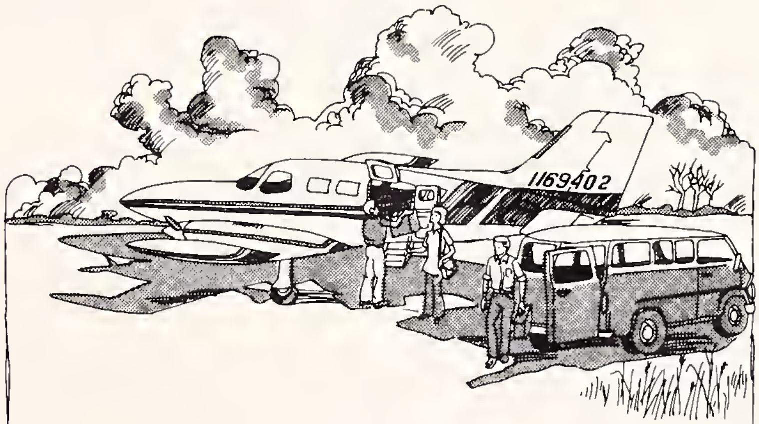

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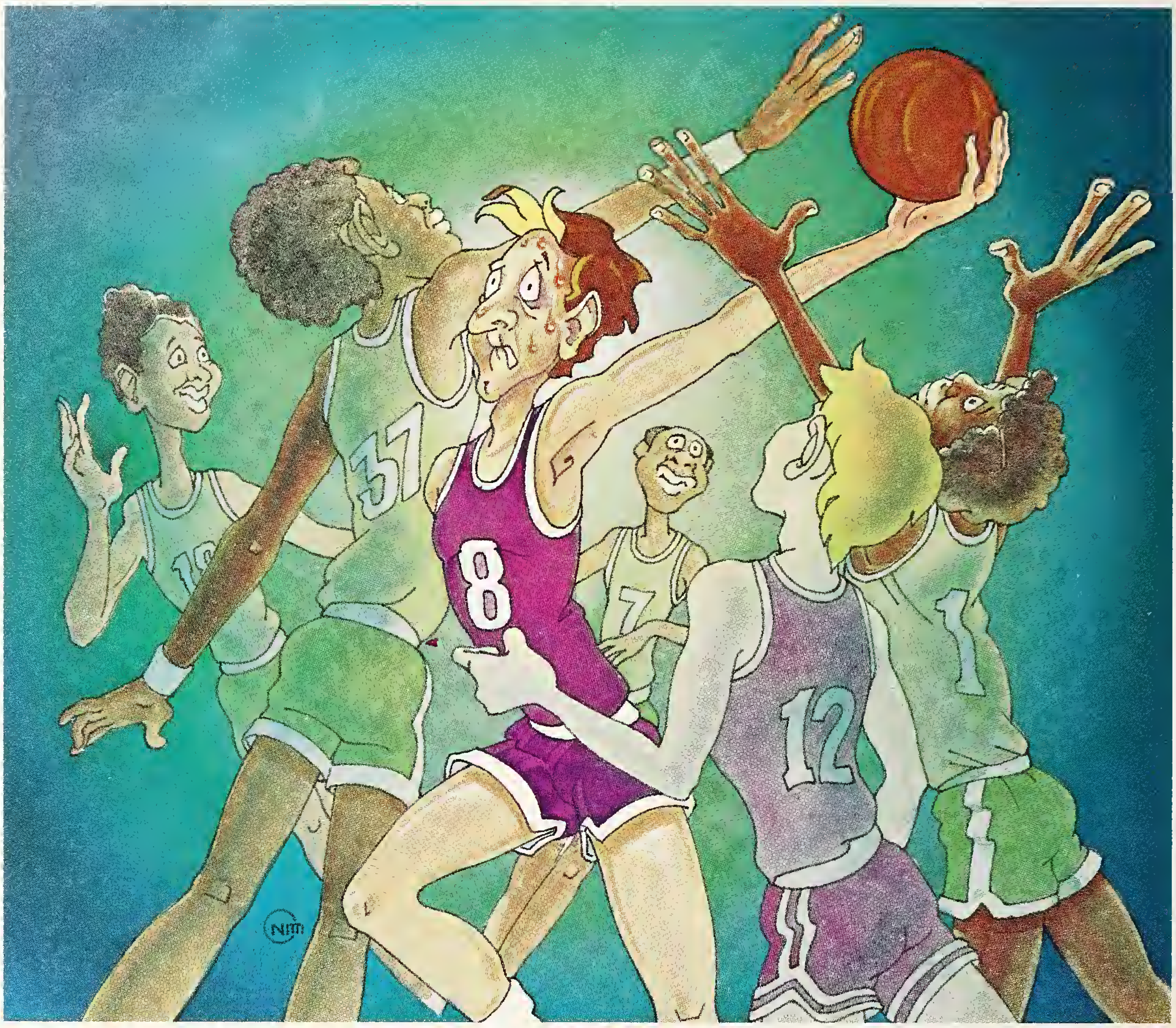

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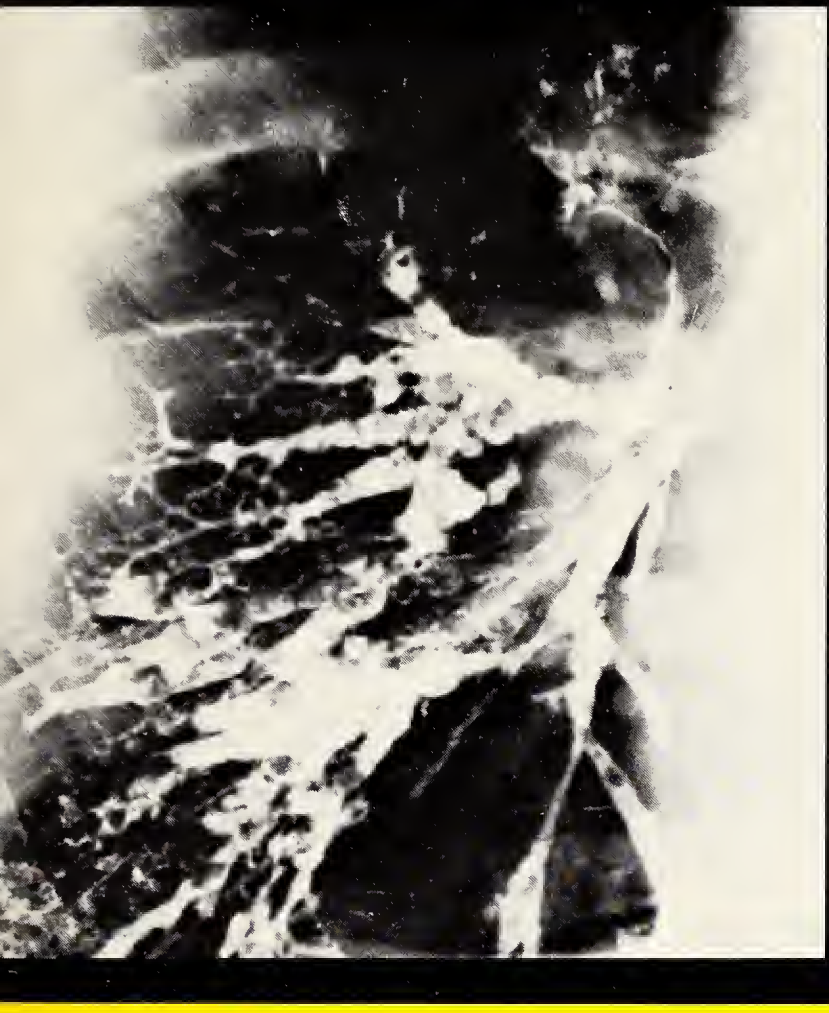

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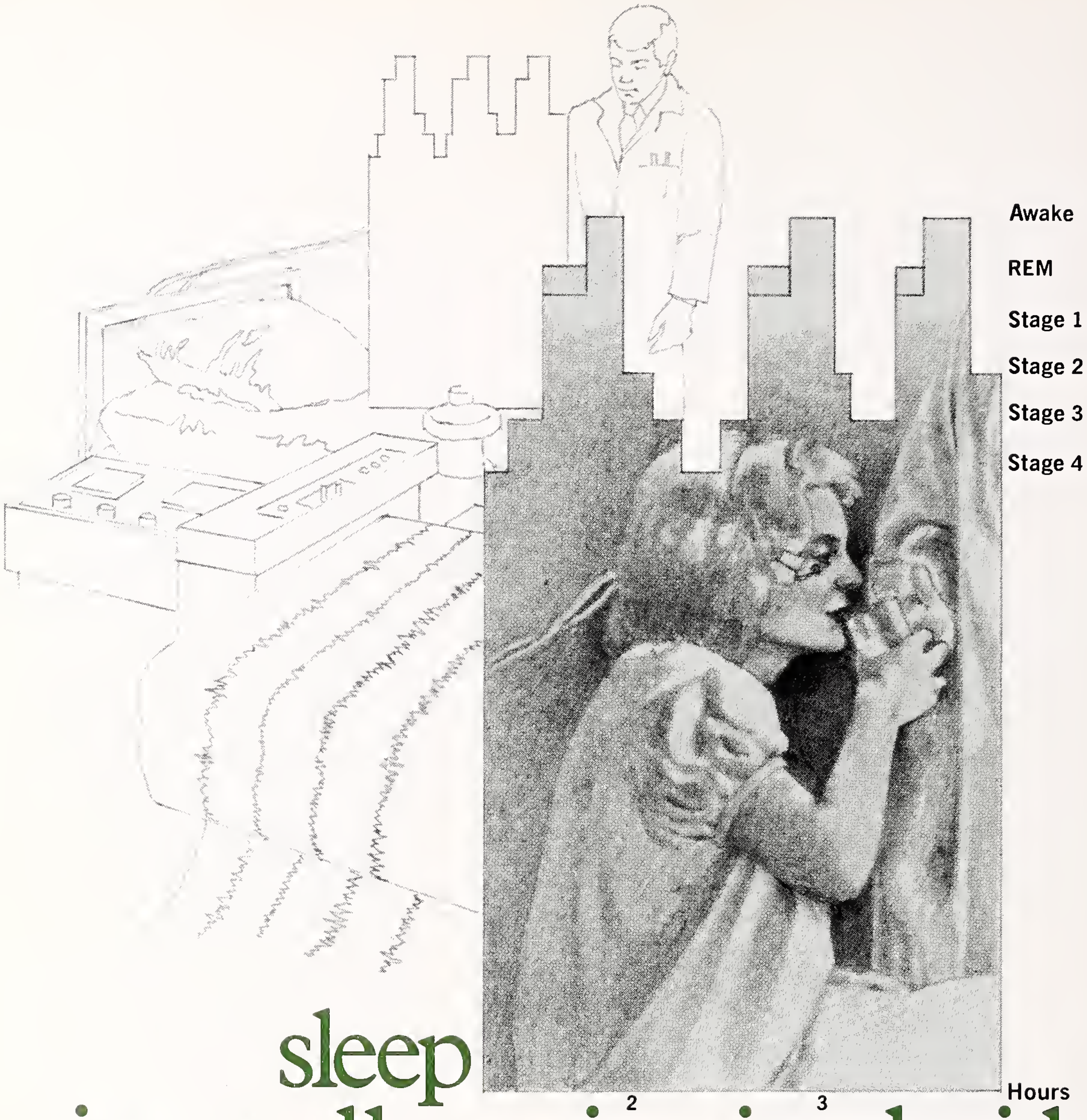

sleep is usually maintained with fewer nighttime awakenings... a consistent benefit of

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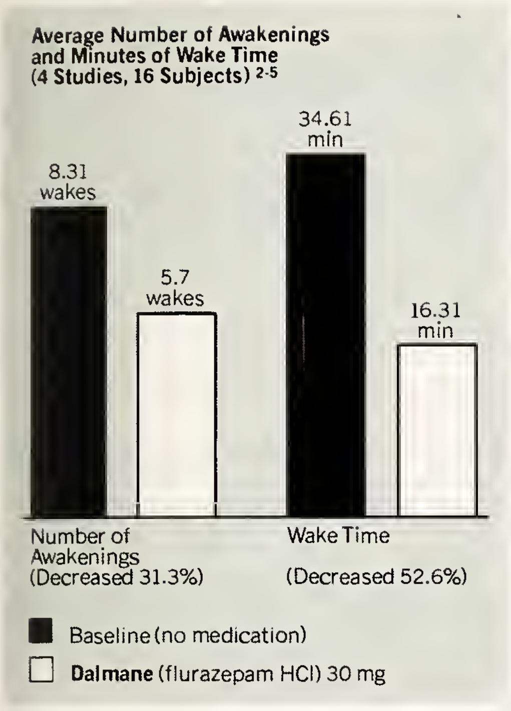
(flurazepam HCl) proved by a 17-night clinical study in the sleep research laboratory evaluating effectiveness in insomnia patients[1]

Eight patients received no medication on nights 1-4; Dalmane (flurazepam HCl) or placebo on nights 5-9; crossover capsule, nights 10-14; and no medication, nights 15-17. While placebo had no significant effect on sleep maintenance, Dalmane reduced nighttime awakenings by 55.1% when given on nights 5-9, 43.7% on nights 10-14. When four control subjects received placebo on the 10 "drug" nights, awakenings *increased* 11.5% over baseline.[1]



confirmed by clinical studies in four geographically separated sleep research laboratories[2-5]

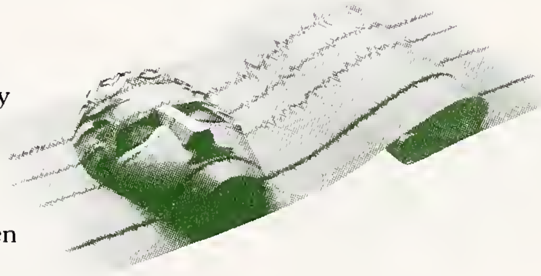
Using a 14-night protocol, involving eight insomniac and eight normal subjects, four studies confirmed the sleep-maintaining effectiveness of Dalmane (flurazepam HCl) and the reproducibility of this response. On average, one 30-mg capsule reduced number of awakenings by 31.3% and wake time by 52.6%. In all these studies, Dalmane induced sleep rapidly, on average within 17 minutes; reduced nighttime awakenings; and provided, on average, 7 to 8 hours of sleep without repeating dosage.[2-5]

Dalmane (flurazepam HCl) induces and maintains sleep, with relative safety

Dalmane is generally well tolerated; morning "hang-over" has been relatively infrequent. While dizziness, drowsiness, lightheadedness and the like have been noted most often, particularly in the elderly and debilitated, physicians should be aware of the possibility of more serious reactions, as noted in the Complete Product Information.

Before prescribing Dalmane (flurazepam HCl), please consult Complete Product Information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.
Contraindications: Known hypersensitivity to flurazepam HCl.
Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.
Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.
Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity, have also been reported in rare instances.
Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg initially until response is determined.
Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.



when restful sleep is indicated

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- **reduces nighttime awakenings**
- **sustains sleep 7 to 8 hours, on average, without repeating dosage**

REFERENCES: 1. Kales J, *et al*: *Clin Pharmacol Ther 12*:691-697, Jul-Aug, 1971
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3. Frost JD Jr: Data on file, Medical Department, Hoffmann-La Roche Inc, Nutley NJ
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5. Dement WC: Data on file, Medical Department, Hoffmann-La Roche Inc, Nutley NJ

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Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

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2. Be guided by the general rules of medcal writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

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CONTRAINDICATIONS: Hypersensitivity to any of the tetracyclines.
WARNINGS: Tetracycline usage during tooth development (last half of pregnancy to eight years) may cause permanent tooth discoloration (yellow-gray-brown), which is more common during long-term use but has occurred after repeated short-term courses. Enamel hypoplasia has also been reported. **Tetracyclines should not be used in this age group unless other drugs are not likely to be effective or are contraindicated.**
Usage in pregnancy. (See above **WARNINGS** about use during tooth development.)
Animal studies indicate that tetracyclines cross the placenta and can be toxic to the developing fetus (often related to retardation of skeletal development). Embryotoxicity has also been noted in animals treated early in pregnancy.
Usage in newborns, infants, and children. (See above **WARNINGS** about use during tooth development.)
All tetracyclines form a stable calcium complex in any bone-forming tissue. A decrease in fibula growth rate observed in prematures given oral tetracycline 25 mg/kg every 6 hours was reversible when drug was discontinued.
Tetracyclines are present in milk of lactating women taking tetracyclines.
To avoid excess systemic accumulation and liver toxicity in patients with impaired renal function, reduce usual total dosage and, if therapy is prolonged, consider serum level determinations of drug. The anti-anabolic action of tetracyclines may increase BUN. While not a problem in normal renal function, in patients with significantly impaired function, higher tetracycline serum levels may lead to azotemia, hyperphosphatemia, and acidosis.
Photosensitivity manifested by exaggerated sunburn reaction has occurred with tetracyclines. Patients apt to be exposed to direct sunlight or ultraviolet light should be so advised, and treatment should be discontinued at first evidence of skin erythema.
PRECAUTIONS: If superinfection occurs due to overgrowth of nonsusceptible organisms, including fungi, discontinue antibiotic and start appropriate therapy.
In venereal disease., when coexistent syphilis is suspected, perform darkfield examination before therapy, and serologically test for syphilis monthly for at least four months.
Tetracyclines have been shown to depress plasma prothrombin activity; patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage.
In long-term therapy, perform periodic organ system evaluations (including blood, renal, hepatic).
Treat all Group A beta-hemolytic streptococcal infections for at least 10 days.
Since bacteriostatic drugs may interfere with the bactericidal action of penicillin, avoid giving tetracycline with penicillin.
ADVERSE REACTIONS: Gastrointestinal (oral and parenteral forms): anorexia, nausea, vomiting, diarrhea, glossitis, dysphagia, enterocolitis, inflammatory lesions (with monilial overgrowth) in the anogenital region.
Skin: maculopapular and erythematous rashes; exfoliative dermatitis (uncommon). Photosensitivity is discussed above (See **WARNINGS**).
Renal toxicity: rise in BUN, apparently dose related (See **WARNINGS**).
Hypersensitivity: urticaria, angioneurotic edema, anaphylaxis, anaphylactoid purpura, pericarditis, exacerbation of systemic lupus erythematosus.
Bulging fontanels, reported in young infants after full therapeutic dosage, have disappeared rapidly when drug was discontinued.
Blood: hemolytic anemia, thrombocytopenia, neutropenia, eosinophilia.
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USUAL DOSAGE: Adults – 600 mg daily, divided into two or four equally spaced doses. More severe infections: an initial dose of 300 mg followed by 150 mg every six hours or 300 mg every 12 hours. Gonorrhea: In uncomplicated gonorrhea, when penicillin is contraindicated, 'Rondomycin' (methacycline HCl) may be used for treating both males and females in the following clinical dosage schedule: 900 mg initially, followed by 300 mg q.i.d. for a total of 5.4 grams.
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Children – 3 to 6 mg/lb/day divided into two to four equally spaced doses.
Therapy should be continued for at least 24-48 hours after symptoms and fever have subsided.
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and a skeletal muscle relaxant shown in extensive clinical studies to afford relief of discomfort in acute musculoskeletal conditions*[5-7] but which is not an antihistamine or tranquilizer derivative and is unlikely to produce a tranquilizing or sedative effect.[5,7,8]

***Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Probably" effective as an adjunct to rest and physical therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Chlorzoxazone does not directly relax tense skeletal muscles in man.

Contraindications: Sensitivity to either component.
Warnings: *Usage in Pregnancy*—Use in women of childbearing potential only when potential benefits outweigh possible risks.
Precautions: Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or any signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped.
Adverse Reactions: Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, chlorzoxazone may possibly have been associated with gastrointestinal bleeding. While PARAFLEX® (chlorzoxazone) tablets and other chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately twenty-four patients, it was not possible to state that the dysfunction was or was not drug induced.
Usual Adult Dosage: Two tablets q.i.d.
Supplied: Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: **1.** Batterman, R.C., and Grossman, A.J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L.S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4. New York, The Macmillan Company, 1970. **3.** Vickers, F.N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C.H., Jr., and Britten, A.F.H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Vernon, W.G.: Curr. Therap. Res. *14*:801, 1972. **6.** Scheiner, J.J.: Curr. Therap. Res. *14*:168, 1972. **7.** Walker, J.M.: Curr. Therap. Res. *15*:248, 1973. **8.** Data on file, McNeil Laboratories, Inc.

†U.S. Patent No. 2,895,877

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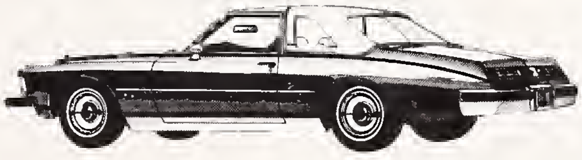

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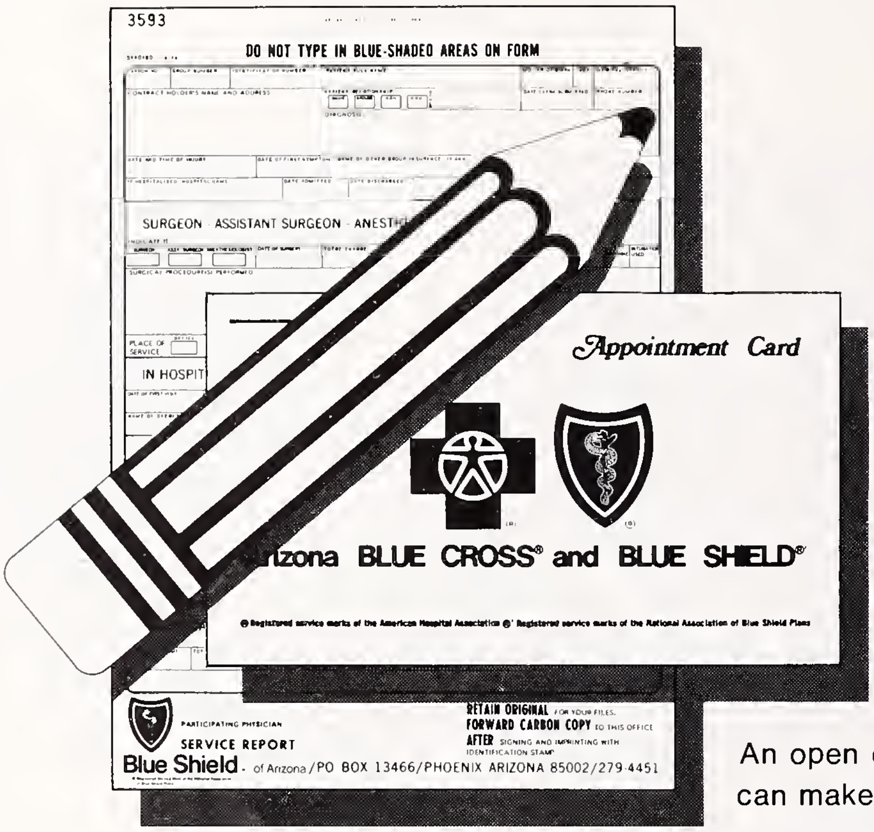
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Opinion & Dialogue

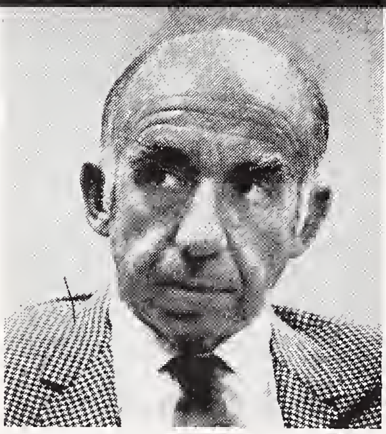
The Role of the Detail Man

Dr. Willard Gobbell
Family Physician
Encino, California

"I may be prejudiced, but I an very much in favor of the detail me I meet. Most of them are knowledg able about the drugs they promote and can be a great help in acquaint ing me with new medication."

Family Physician's Perception

I think that most general practitioners in this area feel as I do about the detail man. Over the years I have gotten to know most of the men who visit me regularly and they in turn have become aware of my particular interests and the nature of my practice. They, therefore, limit their discussion as much as possible to the areas of interest to me. Since I usually see the same representative again in future visits, it is in his best interest to supply me with the most honest, factual, as well as up-to-date information about his products.



Dr. Jeremiah Stamler
Chairman
Department of Community Health and Preventive Medicine, and Dingman Professor of Cardiology
Northwestern University Medical School

"In the total picture of dealing with health problems in this countr there is a potential for detail men to play a meaningful role."

The Positive Influence

My contact with representatives and salesmen of the pharmaceutical industry is the type of contact that people in a medical cente research people, and academic people have and that's in all likelih on a somewhat different level from that of the practicing physician.

Let me touch on how I personally perceive the role of the sales representative. These men reach large numbers of health professionals. Thus they could be—and at times actually are—disseminators of useful information. They could consistently serve a real educational function in their ability to discuss their products.

At present they do distribute printed material, brochures and pamphlets—some of it scientifically sound and therefore truly useful—as well as some excellent film produced by the pharmaceutical industry. When they function in thi

Is He a Source of Information?

Yes, with certain reservations. The average sales representative has a great fund of information about the drug products he is responsible for. He is usually able to answer most questions fully and intelligently. He can also supply reprints of articles that contain a great deal of information. Here, too, I exercise some caution. I usually accept most of the statements and opinions that I find in the papers and studies which come from the larger teaching facilities. It goes without saying that a physician should also rely on other sources for his information on pharmacology.

Training of Sales Representatives

Ideally, a candidate for the position as a sales representative of a pharmaceutical company should be a graduate pharmacist who has a questioning mind. I don't think this is possible in every case, and so it becomes the responsibility of the pharmaceutical company to train these individuals comprehensively. It is of very great importance that the detail man's knowledge of the product he represents be constantly reviewed as well as updated. This phase of the sales representative's education should be a major responsibility of the medical department of the pharmaceutical company.

I am certain that most of these companies take special care to give their detail men a great deal of information about the products they produce—information about indications, contraindications, side effects and precautions. Yet, although most of the detail men are well informed, some, unfortunately, are not. It might be helpful if sales representatives were reassessed every few years to determine whether or not they are able to fulfill their important function. Incidentally, I feel the same way about periodic assessments of everyone in the health care field, whether they be general practitioners, surgeons or salesmen.

Value of Sampling

I personally am in favor of limited sampling. I do not use sampling in order to perform clinical testing of a drug. I feel that drug testing should rightly be left to the pharmacology researcher and to the large teaching institutions where such testing can be done in a controlled environment.

I do not use samples as a "starter dose" for my patients. I do, however, find samples of drugs to be of value in that they permit me to see what the particular medication looks like. I get to see the various forms of the particular medication at first hand, and if it is in a liquid form I take the time to taste it. In that way I am able to give my patients more complete information about the particular medications that I prescribe for them.

---

capacity they are indeed useful; particularly in the fact that they disseminate broadly based educational material and serve not just as "pushers" of their drugs.

The Other Side of the Coin

Obviously, the pharmaceutical companies are not producing all this material as a labor of love—they are in the business of selling products for profit. In this regard the ambitious and improperly motivated sales representative can exert a negative influence on the practicing physician, both by presenting a one-sided picture of his product, and by encouraging the practitioner to depend too heavily on drugs for his total therapy. In these ways, the salesman has often distorted objective reality and undermined his potential role as an educator.

The Industry Responsibility

Since the detail man must be an information resource as well as a representative of his particular pharmaceutical company, he should be carefully selected and thoroughly trained. That training, perforce, must be an ongoing one. There must be a continuing battle within and with the pharmaceutical industry for high quality not only in the selection and training of its sales representatives, but also in the development of all of its promotional and educational material.

The industry must be ready to accept constructive as well as corrective criticism from experts in the field and consumer spokesmen, and be willing to accept independent peer review. The better educated and prepared the salesman is, the more medically accurate his materials, the better off the pharmaceutical industry, health professionals and the public—*i.e.*, the patients—will be.

Physician Responsibility

The practicing physician is in constant need of up-dated information on therapeutics, including drugs. He should and does make use of drug information and answers to specific questions supplied by the pharmaceutical representative. However, that information must not be his main source of continuing education. The practitioner must keep up with what is current by making use of scientific journals, refresher courses, and information received at scientific meetings.

The practicing physician not only has the right, but has the responsibility to demand that the pharmaceutical company and its representatives supply a high level of valid and useful information. I feel certain that if such a high level is demanded by the physician as well as the public, this demand will be met by an alert and concerned pharmaceutical industry.

From my experience, my impression is that sectors of the pharmaceutical industry are indeed ethical. I challenge the industry as a whole to live up to that word in its finest sense.

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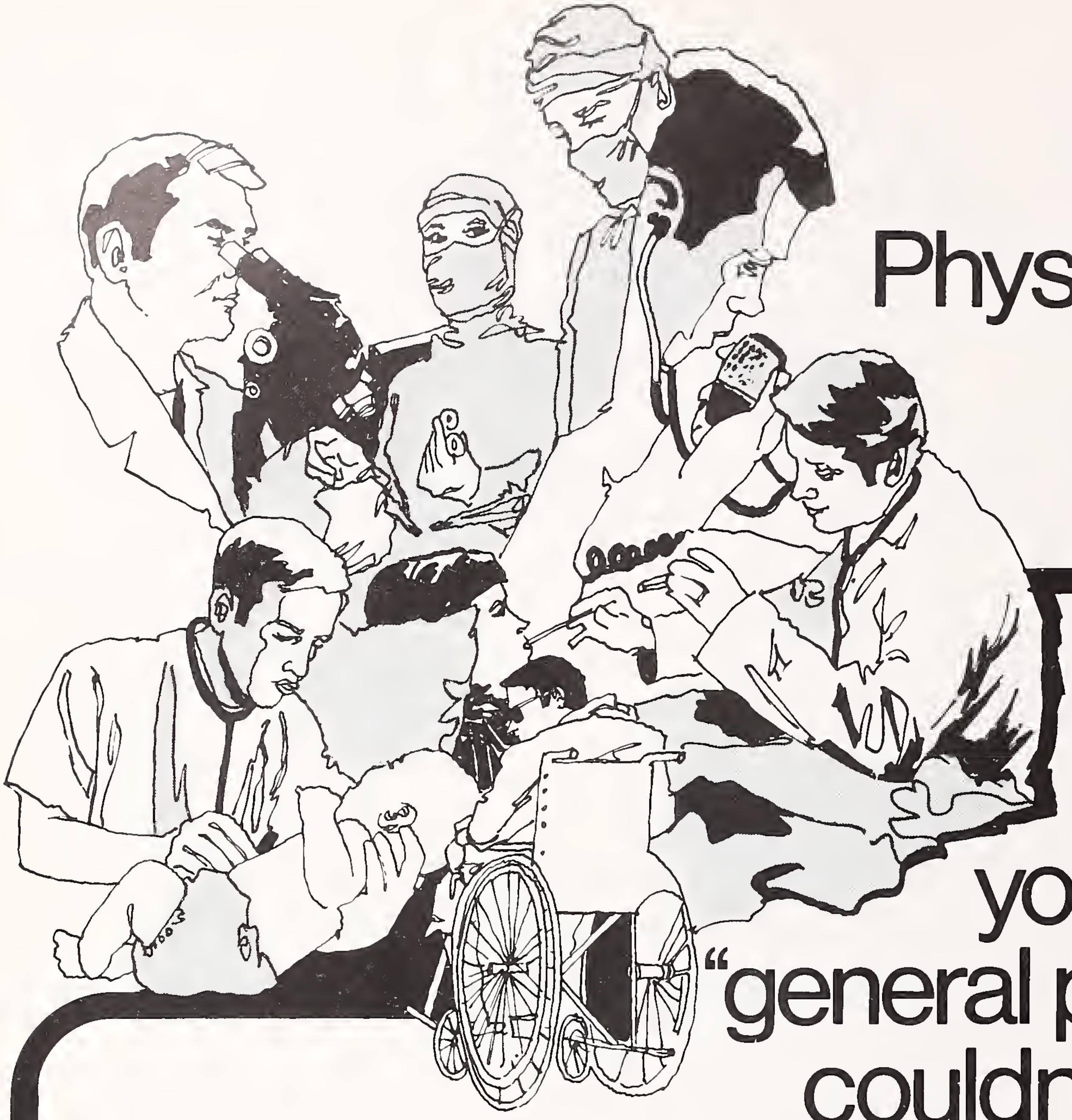

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BRONCHIECTASIS IN ALLERGIC ASPERGILLOSIS BEAP SYNDROME

DANIEL H. GOODMAN, M.D.

Immunologic reactions in the lung are commonly thought of as either asthmatic in nature, or associated with parenchymal reactions, such as are seen in farmer's lung. The BEAP syndrome represents an example of reversible airways obstruction associated with an unusual form of central bronchiectasis. Although it has been more frequently reported from the United Kingdom, the case report described herein represents an association of atopic asthma and Aspergillus which may be more common than previously thought to occur in this country. Better appreciation of the association may lead to specific diagnostic approaches.

Allergic bronchopulmonary aspergillosis, once thought to be rare[1] in the U.S., is now considered not rare.[2] In the United Kingdom it has been recognized as a fairly common (up to 20%) complication of patients with chronic asthma.

The criteria for the diagnosis of allergic bronchopulmonary aspergillosis are episodic wheezing, low grade fever, expectoration of characteristic brown plugs containing Aspergillus mycelia, transient pulmonary infiltrates, eosinophilia of blood and sputum, repeated cultures of Aspergillus and precipitating antibody to Aspergillus. A characteristic "central" bronchiectasis involving the proximal bronchi frequently complicates the disease.[3] The recognition of co-existent bronchiectasis, eosinophilia, asthma and pneumonitis constitutes the criteria for the "BEAP" syndrome.[4]

CASE HISTORY

A 32-year-old white male presented on August 3, 1973 with a history of asthma since early infancy. His maternal grandmother had asthma and a sibling was intolerant to milk. He also had intolerance to cow's milk, colic, vomiting, nasal congestion, cough, wheezing and frequent respiratory infections. At nine months of age he was hospitalized for pneumonia. During early childhood he suffered repetitive lower respiratory infections which were diagnosed "asthmatic bronchitis." A diagnosis of asthma was made at age seven. Skin tests, by pressure-puncture and intradermal methods, revealed reactivity to grass, tree and weed pollens, mold spores and epidermals. He was placed on a hyposensitization program with pollens, molds, house dust and bacterial vaccines.

In September 1962 he was hospitalized for cough, wheezing and pleuritic pain in the region of the left scapula. His temperature was 100°. An X-ray of the chest revealed a fibrotic and nodular density in the left upper lobe and soft bilateral infiltrates in the bases. A white blood cell count was 10,000 with 14% eosinophiles. Studies for tuberculosis, coccidioidomycosis, blastomycosis and histoplasmosis were all negative. He was treated with broad spectrum antibiotics. Diagnosis, on discharge, was "primary atypical pneumonia", bronchial asthma, allergic rhinitis and a history of penicillin sensitivity.

Within weeks of his discharge he was readmitted to the hospital because of continued wheezing, recurrence of malaise, a productive cough, and interscapular chest pain. Cold and febrile agglutinins were negative and the white blood cell count revealed a leukocytosis with 15% eosinophiles. Sedimentation rate was 30 mm. per hour. Fungus cultures of the sputum were repeatedly positive for Aspergillus. The X-ray continued to show a left apical pneumonitis. At bronchoscopy there was mucus coming from the apical segment of the left upper lobe. No other specific bronchoscopic findings were noted.

A thorocotomy was done with resection of the apical segment of the left upper lobe. The pathologist's report was as follows: "Chronic organizing granulomatous pneumonitis and bronchitis, etiology undetermined." He was treated again with broad spectrum antibiotics.

One year later he was hospitalized with a low grade fever, cough, and a greenish-brown sputum. Chest X-ray at that time showed infiltration in the right upper and lower lobes. Significant laboratory findings included 29% Eosinophilia and pulmonary function studies were compatible with bronchial asthma. Sputum cultures and serum complement fixation tests for fungi were negative. During the course of hospitalization the patient had frequent nocturnal attacks of asthma. Two inhalations of Aspergillus extract,

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From: The Allergy-Asthma Clinic, Ltd., Phoenix and Mesa, Arizona. Reprint requests to: 31 West Camelback Road, Phoenix, Arizona 85013 (Dr. Goodman).

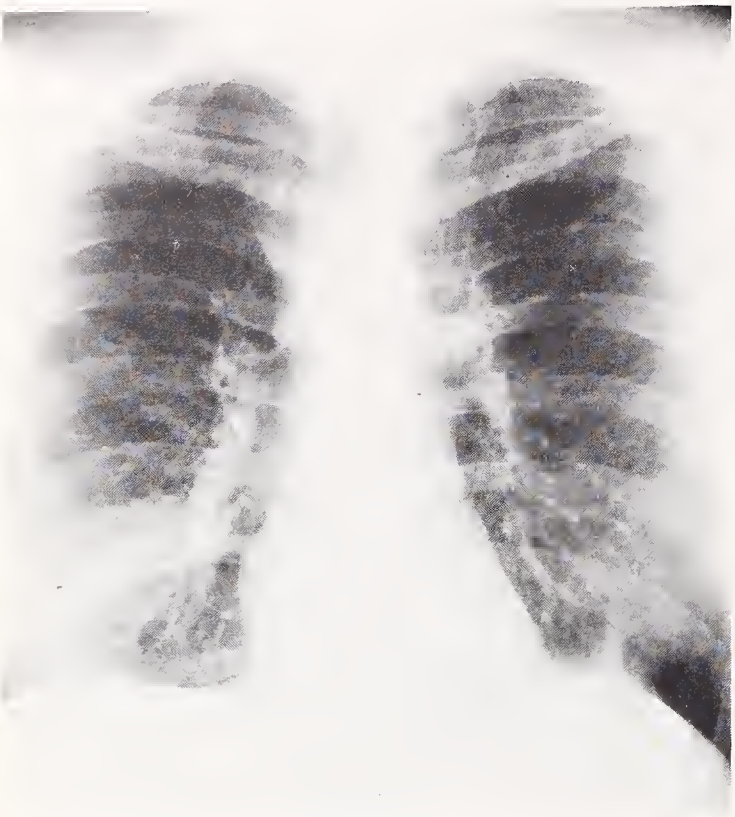

Figure 1
Pneumonia, right middle lobe – March 14, 1973.

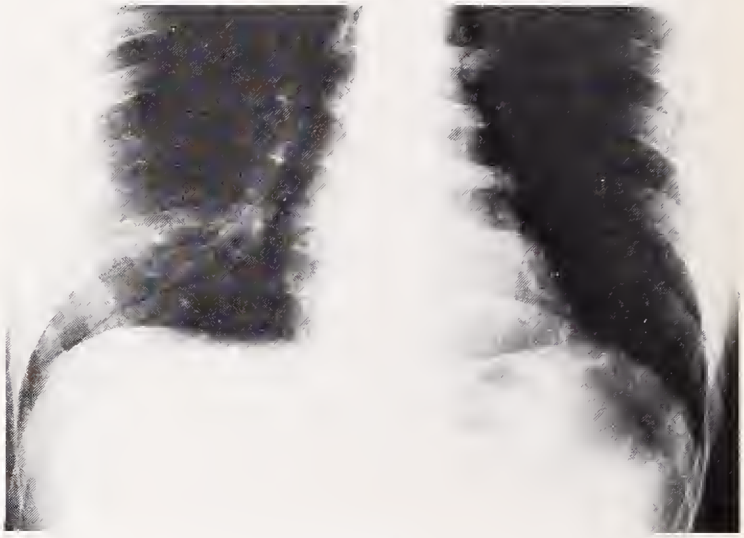

Figure 2
Pneumonitis, right middle lobe – October 15, 1973.

1,000 PNU, produced a 50% drop in the FEV_1. His discharge diagnoses were bronchial asthma and pneumonitis, right upper lobe, etiology unknown, probably obstructive pneumonitis.

In March 1973 he was hospitalized in San Francisco with a diagnosis of acute right middle lobe pneumonitis. (Fig. 1) He was only slightly febrile despite the fact that he had definite physical and X-ray findings of pneumonia and complained bitterly of right anterior pleuritic chest pain. Physical findings were minimal. On the third day of hospitalization, the patient had an episode of productive cough for the first time and simultaneously with the onset of this productive coughing, his chest pain cleared up. Clinically, the patient felt well and he was discharged. Six months later he was hospitalized for the fourth time with similar complaints. An X-ray of the chest revealed a pneumonitis involving the middle lobe of the right lung. (Fig. 2)

A pressure-puncture test with Aspergillus extract resulted in a 4+ positive immediate wheal and flare reaction. A presumptive diagnosis of allergic bronchopulmonary aspergillosis was made. Precipitins to *Aspergillus fumigatus* were present in significant concentration. Bronchoscopy and bronchogram were done. Extensive "central" type of bronchiectasis involving the proximal bronchi throughout both lungs was demonstrated. (Figs. 3, 4) The criteria necessary for the diagnosis of allergic bronchopulmonary aspergillosis are present.

DISCUSSION

A. fumigatus, an opportunistic pathogen for man, is ubiquitous and has a world-wide distribution. It is pathogenic for birds, in particular, and also for cattle. In atopic subjects it may act as an allergen producing specific IgE antibodies. It may also cause asthma and pulmonary eosinophilia with the development of Type III IgG precipitating antibodies.[6] In non-atopic subjects *A. fumigatus* may cause a fungal ball or aspergilloma demonstrated by X-ray, and may complicate cystic fibrosis. Invasive aspergillosis may also complicate the course of patients with leukemia, Hodgkin's disease or after massive X-radiation.

Anatomically, classical bronchiectasis is usually confined to the basilar segments, the lingula and the right middle lobe. The irreversibly dilated bronchi, generally due to bacterial infections, end blindly. In bronchiectasis associated with allergic aspergillosis, the medium size bronchi throughout both lung fields may be involved. In contrast to classical bronchiectasis wherein pa-

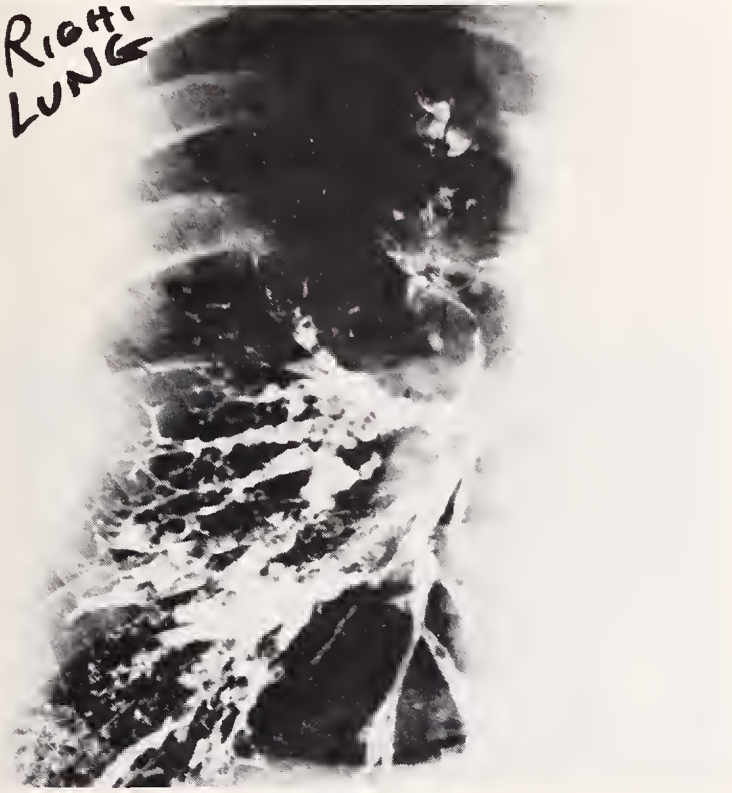

Figure 3
Etensive proximal bronchiectasis, right middle and upper lung fields.

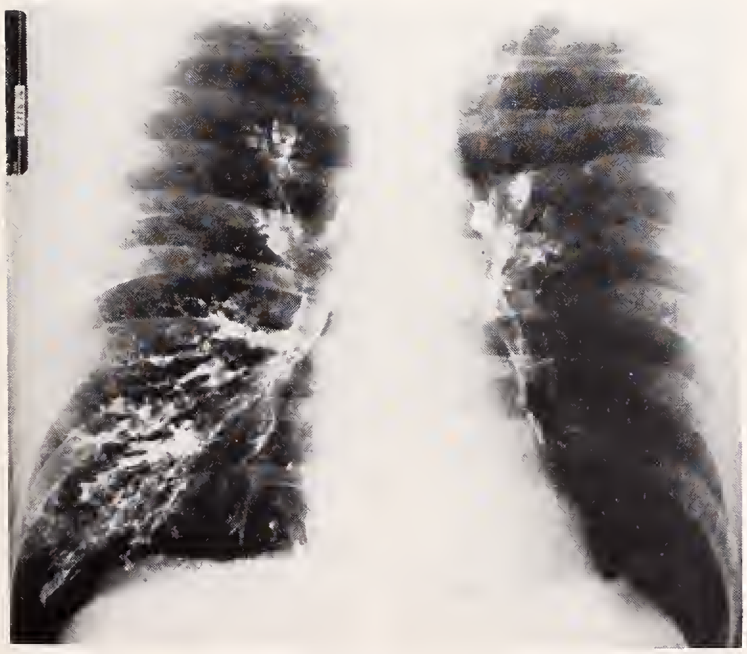

Figure 4
Bilateral "central" type of bronchiectasis.

tients generally raise copious amounts of purulent sputum, the patient with the BEAP syndrome finds it difficult to mobilize his sputum. Mucus plugs are frequently retained for long periods of time,[7] thereby causing the bronchial wall damage described.

The bronchi in allergic bronchopulmonary aspergillosis are apparently damaged at the site of the lodgement of a "plug" which contains Aspergillus mycelium, the antigenic source for the formation of precipitins. It is believed that the antigen-antibody complexes in the bronchial wall at the site of the "plugs" cause a Type III Arthus reaction which results in a destructive inflammatory reaction in the bronchial wall.[3]

Asthmatic patients with eosinophilia who have recurrent episodes of pneumonia should be suspected of harboring *Aspergilli.* When *Aspergillus spp.* cannot be recovered in the sputum, and there is a positive pressure-puncture or intradermal test for *Aspergillus spp.*, serum should be examined for precipitins to *Aspergillus.*

Bronchiectasis is the malignant lesion in the BEAP syndrome. It is responsible for persistent colonization of *Aspergillus spp.;* for the repetitive pneumonic episodes; hemoptysis; and the chronicity, morbidity and ultimate mortality.[4]

The BEAP syndrome is a new name for an old disease entity which is becoming increasingly recognized in the U.S.A. It emphasizes bronchiectasis as the major complicating component. There is no specific therapy for BEAP syndrome. Amphotericin B and Nystatin are ineffective. Many strains of *Aspergillus* are only slightly susceptible to Amphotericin B.[8, 9] Temporary benefit may be obtained by therapy with broad spectrum antibiotics and steroids, which cause a regression of the eosinophillic pneumonitis. Immunotherapy with *A. fumigatus* extract is of dubious value.

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REGIONAL ENTERITIS:
ENTEROLITH CAUSING INTERMITTENT OBSTRUCTION

Charles L. Johnson, M.D.
Floyd B. Levagood, M.D.

A case review of the unusual combination of a patient with intermittent bowel obstruction due to an enterolith, who gives a long history of GI complaints, that are probably related to regional enteritis.

Regional ileitis was first described as a distinct clinical entity by Crohn, Ginzberg and Oppenheimer in 1932.[1] Since that time, although volumes have been written regarding the disease, our knowledge remains incomplete, treatment remains somewhat controversial, and the disease frequently presents a difficult diagnostic dilemma. The relationship of enteroliths and obstructive lesions is known, and causative factors in the formation of enteroliths have been studied, but we are unaware of any documented instances where an enterolith was associated with regional enteritis.[2, 3]

CASE REPORT: A 68-year-old white male was admitted to Boswell Memorial Hospital for the first time on August 10, 1973, because of abdominal pain and emesis. An upper gastrointestinal series showed a small hiatus hernia and a barium enema showed minimal diverticulosis. An oral cholecystogram and intravenous pyelogram were normal. His symptoms resolved with medical management and he was discharged on August 16, 1973. The patient was readmitted on August 18, 1973, for abdominal distention and pain. At this time, flat and upright abdominal roentgenograms disclosed markedly dilated small bowel with multiple fluid levels consistent with mechanical small bowel obstruction. The patient was afebrile, had a normal white and differential count, and his abdomen was nontender. No abdominal masses were palpable.

The patient's past history was significant in that he had had similar symptoms, consisting of abdominal pain and occasional mild to moderate distention, intermittently for some 12 years. The symptoms would persist usually for a period of several hours and would often be relieved by an emesis. There was no apparent relation of the

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From: Walter O. Boswell Memorial Hospital, Sun City, Arizona (Dr. Johnson and Dr. Levagood). Reprint requests to 13200 North 103rd Ave., Sun City, AZ 85351 (Dr. Johnson).

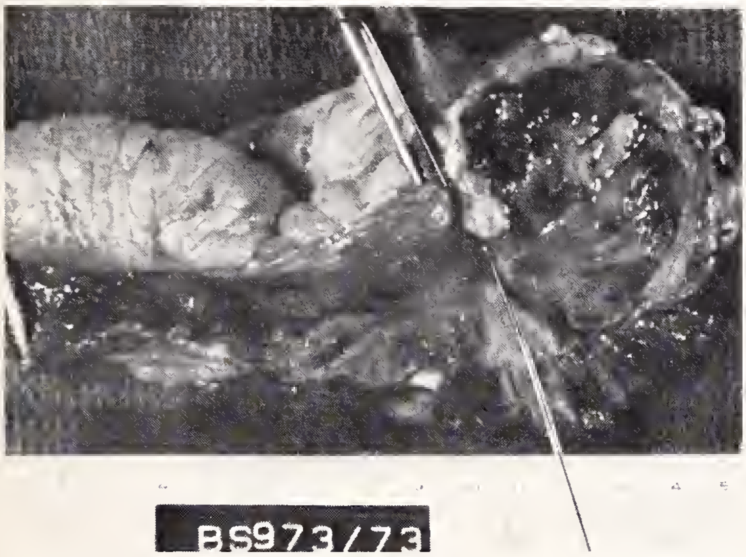

Figure 1
Terminal ileum and cecum. Probe points to small inflammatory polyp at ileo-cecal valve.

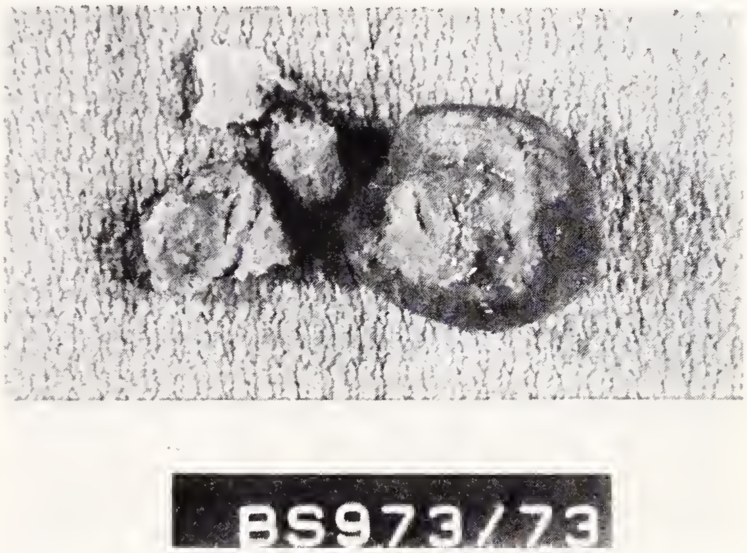

Figure 2
Three centimeter enterolith removed from distal ileum.

pain to passage of flatus or stool, however, the episodes were probably of such short duration that this relationship could not be determined with accuracy. He was hospitalized in 1965, and at that time an oral cholecystogram was negative. No gastrointestinal studies were obtained, and the patient's symptoms resolved with medical treatment. In October 1968 an upper gastrointestinal series was interpreted as normal, and in June 1973 an oral cholecystogram was normal and an upper gastrointestinal series disclosed a small hiatus hernia. Interestingly, a small bowel contrast study was never done.

Following naso-gastric decompression and intravenous rehydration, the patient was taken to surgery on August 21, 1973, and the findings at surgery were consistent with regional enteritis. The terminal 15 cm. of the ileum were markedly involved with thickened mesentery, creeping fat, and thickening and induration of the bowel wall. Succulent nodes were palpable in the mesentery. In addition, skip areas were noted at approximately 15 to 20 cm. intervals extending from the terminal ileum to just distal to the ligament of Treitz.

Proximal to the severe involvement in the terminal ileum, a stone was palpated in the bowel. The presence of this stone raised a question of gallstone ileus, in addition to the findings of regional enteritis. However, careful examination of the right upper quadrant, gallbladder and duodenum disclosed no evidence of inflammation or fistula formation.

The terminal ileum and approximately 5 cm. of the cecum were resected and the enterolith was removed. (See Figures 1 and 2) A primary end-to-end ileo-ascending colostomy was done. The pathologist's report confirmed changes in the bowel consistent with Crohn's disease.

The patient's post-operative course was essentially uneventful. The naso-gastric tube was removed on August 25, 1973, and he was discharged from the hospital on August 30, 1973. At the time of discharge, he was having several loose stools per days. By December, 1973, his bowel motions had stabilized at two per day. He has been seen at regular intervals since discharge and continues to do well. He has had no recurrence of the symptoms noted preoperatively, and there has been no evidence to suggest recrudescence of the residual skip areas in the small bowel.

Comments: Regional enteritis is known to be associated with numerous complicating entities. For example, although rare, carcinoma can be associated with Crohn's disease.[4, 5] Again, though rare, massive gastrointestinal hemorrhage may occur in regional enteritis,[6] as may free perforation.[7, 8] Other entities may be easily confused with regional enteritis, such as a diverticulum of the small bowel causing abscess and bowel obstruction,[9] and small bowel polyps causing obstruction at the ileo-cecal valve.[10]

As previously noted, we have been unable to locate any documented instances of an enterolith being associated with regional enteritis. Atwell and Pollock mention the possibility of such an association, and discuss the mechanism (stasis) of formation of intestinal calculi proximal to an area of partial obstruction.[3] Of interest in this patient's history is the fact that at no time during this 12-year history did he evidence any signs of systemic toxicity such as fever, leukocytosis or abdominal tenderness.

It is beyond the scope of this paper to discuss the rationale of treatment of regional enteritis. In general, we would agree with Colcock,[11] and with Arbor, et al,[12] in following a reasonably conservative route so as to conserve as much functioning bowel as possible. We would also favor resection as opposed to by-pass whenever possible. As a result of our experience with this case, we would like to make two comments: (1) We advocate the more liberal use of small bowel contrast studies whenever the cause of gastrointestinal symptomatology is not readily obvious following upper and lower gastrointestinal studies; (2) We would again stress the fact that regional enteritis may occur in *any* age group, and should be given serious consideration in the differential diagnosis whenever the cause of abdominal findings is not immediately apparent.

ABSTRACT

A case is presented of a 68-year-old male with a 12-year history of symptoms of intermittent bowel obstruction, always previously relieved spontaneously. Exploratory laparotomy was carried out when a full-blown small bowel obstruction occurred. The findings at surgery were those of severe involvement of the terminal ileum with regional enteritis associated with skip areas extending to the duodenum and a small bowel enterolith acting as a ball-valve to produce his intermittent obstructive symptoms. A plea is made for the more liberal use of small bowel contrast studies in gastrointestinal symptomatology and serious consideration of regional enteritis in *any* age group regardless of atypical manifestations.

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THE NAVAJO WAY: AS RELATED TO PREGNANCY, CHILDBEARING AND CHILDREARING

I will be happy forever, nothing will hinder me; I walk with beauty before me, I walk with beauty behind me, I walk with beauty below me, I walk with beauty above me, I walk with beauty around me, my words will be beautiful;
—Prayer, Myth of Beauty Way Female Branch

Palmer C. Evans, M.D.
Juanita Fike, C.N.M.

Recently, the American College of Obstetricians and Gynecologists and the Indian Health Service have embarked on a project to supply volunteer Obstetricians and Gynecologists to the Indian Health Service in order to provide services to the American Indian. Among the Navajo, no less than among members of any cultural background, deeply held traditional beliefs may have great bearing on the way an individual responds to suggestions, treatment, and care given in the field of health. Many of their beliefs are simply common sense, others reflect the awe with which the Indian regards native and natural phenomena, and still others are derived from sacred myths and legends which are a part of the healing ceremonies. Recognizing this fact, we desired to learn more about beliefs commonly held by Navajos concerning all aspects of the maternity cycle. In two informal discussion periods with Navajo registered nurses, licensed practical nurses, nurse aides, family planning counselors, and clerks many beliefs were pooled. Some of these beliefs were personal and some seemed only to reflect older traditions. Some seemed to vary slightly from person to person, but an attempt has been made to record each belief as nearly as possible as understood by the majority of those sharing in these discussions.

Included in the following list are several taboos taken from *Navajo Taboos*, Navajo Historical Publications, Cultural Series No. 1, Ernest L. Bulow, printed in 1972 by the Research Section, Museum and Research Department of The Navajo Tribe. Those preceded by an asterisk (*) come from this source; the remainder were compiled in discussion sessions with hospital personnel. The belief will be indicated by the letter B; the result will be indicated by the letter R. In instances in which the treatment was mentioned, it will be written in parentheses.

PREGNANCY

B. Neither parent should rope a horse or tie up one for branding while the wife is pregnant.
R. The unborn child will have cord around its neck.
B. Neither parent should make a weaving tool or saw anything during the wife's pregnancy.
R. The child will be born with a cleft lip.
B. A pregnant woman must not see an eclipse of the sun or moon.
R. Her baby will get sick, have diarrhea and vomiting.
B. Neither parent should see a deceased person or attend a funeral.
R. Their baby will be sick much of the time.
B. The pregnant woman should not see a dead animal.
R. The baby will be sick. (The causative object, i.e., dog, etc., is recreated in some media, e.g., sandpainting, drawing, clay, etc., and this recreated object is hidden away to deteriorate and disintegrate.)
B. A pregnant woman should not see a broken doll.
R. Something will be wrong with her baby.
B. A pregnant woman should not see a sandpainting.
R. Her unborn baby will be affected in some way, depending on the picture contained in the sandpainting.
B. If the expectant father is a Yei-be-chei dancer, he must not wear a mask while his wife is pregnant. (Yei-be-chei is the major winter ceremony.)

From: Fort Defiance Indian Hospital, Department Obstetrics and Gynecology. Reprint requests to 116 N. Tucson Blvd., Tucson, AZ 85716 (Dr. Evans).

R. His baby will be born mute, blind, or with a misformed face.

B. A pregnant woman must not see a mechanical doll.

R. Her baby's walking or crawling will be affected.

B. A pregnant woman should not see a snake swallowing food.

R. The baby will develop a throat or breathing problem.

B. A pregnant woman should not eat an excessive amount of salt.

R. It will cause miliaria.

B. A pregnant woman should not think unhappy thoughts.

R. Her pregnancy, labor, and delivery will be more difficult.

B. A pregnant woman should not be lazy.

R. Her unborn baby will get too big.

B. A pregnant woman should not touch or see a dead body.

R. Her baby will have nightmares later. (The baby must have ashes put on it for four days.)

B. If chloasma appears on a pregnant woman's face.

R. Her baby will be a boy. (Rub the baby's first meconium stool on the chloasma spots to cause their disappearance.)

B. A pregnant woman should not iron clothes.

R. (None was given.)

B. If an unborn baby kicks a lot.

R. The baby is a boy.

B. If a pregnant woman has a sore on her leg.

R. The baby will be marked in some way.

B. A pregnant woman should not swallow gum.

R. The baby will have a birthmark.

B. The pregnant woman should not assemble a layette.

R. Trouble can be expected with her baby.

B. A name for the baby should not be picked out prior to its birth.

R. It will cause bad luck.

B. A pregnant woman should not attend any sing other than the Blessing Way.

R. The baby will have trouble. (A sing is another word for ceremony.)

B. An expectant father should not hunt or kill.

R. The baby will have problems.

B. Neither expectant parent should make a weaving tool with more than five projections.

R. The child will be born with more than five fingers or toes.

B. Neither expectant parent should tie, screw, or nail anything.

R. The baby cannot be born.

B. A pregnant woman should not see a frog jumping into a fire.

R. Her baby will develop sores.

*B. Two hats should not be worn at once.

R. Twins.

*B. A pregnant woman should not make a circle around herself.

R. She'll have a round baby.

*B. An expectant father should not kill birds.

R. The baby will look like a bird.

*B. An expectant father should not sew on a saddle.

R. It will ruin the baby's mouth.

*B. Don't stand in the doorway when a pregnant woman is present.

R. She'll have trouble having the baby.

*B. A pregnant woman should not make a slingshot.

R. The baby will be crippled.

*B. An expectant father should not look at any strange creatures.

R. The baby will be born strange.

*B. A pregnant woman should not peel potatoes or apples.

R. The baby will have a flat face.

*B. An expectant father should not hit a sheep's legs.

R. The baby will be crippled.

*B. A pregnant woman must not be yelled at.

R. The baby will be deaf.

*B. A pregnant woman should not eat a lot of sweets.

R. The baby will not be strong.

*B. A pregnant woman should not sleep too much when she is about to have a baby.

R. The baby will mark her in some way.

*B. A pregnant woman should not jump around.

R. It will induce labor.

*B. A pregnant woman should not eat too much fat.

R. The baby will have trouble coming out.

*B. An expectant father should not kill a frog.

R. His baby will walk or jump like a frog.

*B. A pregnant woman should not look at any wild animal.

R. The baby will look like it or be wild.

*B. A pregnant woman should not cut gloves off at the knuckles.

R. The baby will have short, round fingers.

*B. A pregnant woman should not carry small animals.
R. Her baby will look like that animal.
*B. A pregnant woman should not put bowls together.
R. She'll have trouble having the baby.
*B. An expectant father should not see an accident.
R. It will affect the baby.
*B. A man should not tease his wife about pregnancy.
R. What he says will come true.
*B. A pregnant woman should not tie knots.
R. Her delivery will be difficult.

Childbearing and Childrearing

B. If a woman goes into labor and has been weaving, she should remove the weaving sticks and undo the top rope.
R. She will have an easier time. (The medicine man has a special stick to undo the yarn during a sing.)
B. A laboring woman should let her hair hang loose.
R. She'll have an easier time.
B. The cord or placenta should be buried near the home, e.g., by the sheep coral.
R. This will determine the occupation of the newborn.
B. If the woman has a difficult labor.
R. The baby's ears should be pierced immediately after birth.
B. A woman should not breathe deeply during delivery.
R. The baby will be sucked back up into her body.
B. Unessential persons should not watch a woman about to deliver.
R. The baby won't come out.
B. A baby's ears should be pierced.
R. The child will listen to its parents and behave.
B. A child should not have his hair cut before he speaks.
R. He will stutter.
*B. Babies should not be hit in the mouth.
R. They'll be stubborn or slow to talk.
*B. A baby should not be allowed to cross its fingers.
R. Its mother will have another one right away.
*B. Babies should not be teased or hurt.
R. They will think bad about the one teasing them and that person will be like that.
*B. A mirror should not be held up to a baby.
R. The baby will go blind.
*B. A baby should not be allowed to suck his thumb.
R. The nail won't grow.
*B. Babies should not be scolded or cussed at.
R. They will be worse.
*B. A small baby should not have its hair cut.
R. It won't think right when it gets older.
*B. A baby should not be held upside down.
R. It will have a flat front.
*B. A baby's head should not be allowed to stay to one side in the cradle board.
R. It will have a wide head.
*B. An infant should not be made to laugh while it's tiny.
R. It's dangerous; it will be affected later; it won't laugh when it grows up.
*B. Boys should not change a baby girl's diapers.
R. They might go blind.
*B. The baby should not be given things you really like.
R. The baby might die.
*B. A cat should not be allowed near a new baby.
R. The cat will suffocate it.

If any of these ill effects occur, the hand-trembler will diagnose the cause and the medicine man is called in for the cure. (The hand-trembler is a diagnostician and the medicine man is the healer.)

If a pregnant patient unexpectedly or unknowingly becomes involved with one of these taboos, the medicine man may perform a Blessing Way ceremony to abolish the consequence. The hospital may be the last hope, according to the Navajo health care personnel.

This large number of beliefs concerning pregnancy and babies is a factor of love as well as a feeling for the preservation of the race.

It is imperative that we as health professionals recognize the importance and value of Native American Medicine and be willing to work within the framework of the culture of these great peoples.

Acknowledgement

We would like to thank all of the Navajo personnel who contributed this information and granted permission for its use.

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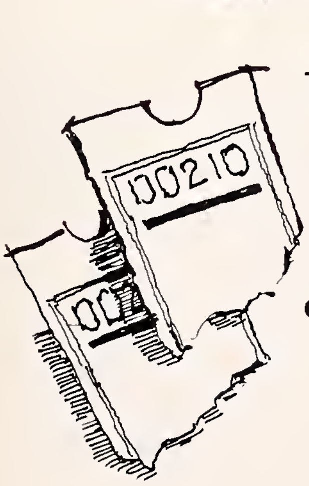

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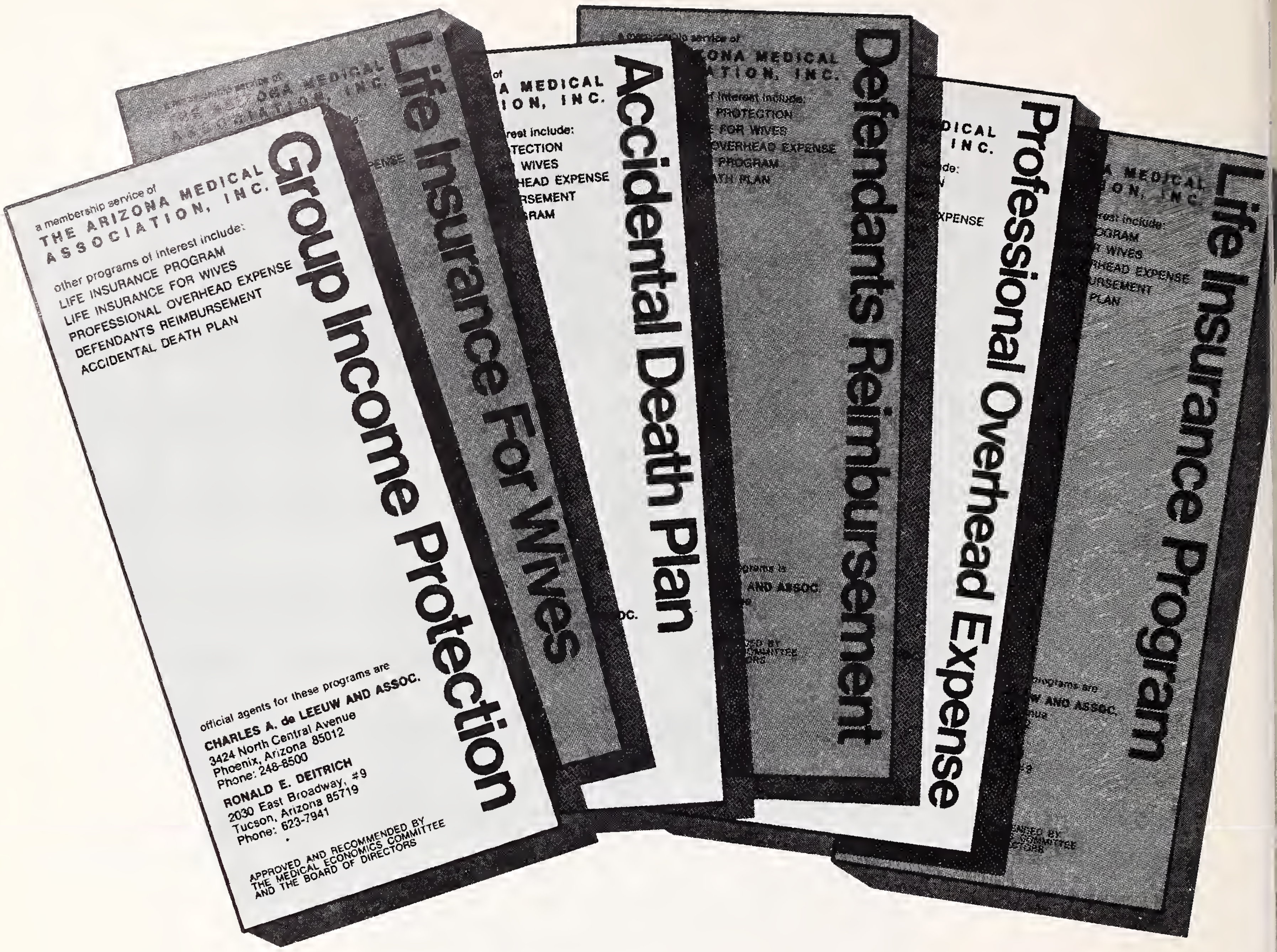

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LITIGATION AND THE MEDICAL PROFESSION

Because physicians and surgeons are human beings, there will be differences of opinion among them on a variety of subjects. However, when these differences involve power, money, malpractice, or lawsuits the reputation of a noble profession is injured. It is regrettable to witness and to read in the newspapers about the litigation among Arizona surgeons. The spin-off of this kind of non-professional activity damages the reputations of not only the litigants but of all doctors in Arizona, not only locally but nationally. Accreditation of parent institutions and programs is threatened and productivity is either halted or reduced for many people. This occurs in spite of any "high principles" that may be involved.

Sir William Osler had some good advice on professional conduct among his Aphorisms:

"1) Live a simple and temperate life, that you may give all your powers to your profession.

2) You may learn to consume your own smoke. The atmosphere is darkened by the murmurings and whimperings of men and women over the non-essentials, the trifles that are inevitably incident to the hurly-burly of the day's routine.

3) Acquire the art of detachment, the virtue of method, and the quality of thoroughness, *but above all the grace of humility.*

4) The physician needs a clear head and a kind heart.

5) It must be confessed that the practice of medicine among our fellow creatures is often a testy and choleric business."

It is recognized that some situations arise in every walk of life in which only a legal solution seems possible.

However, doctors in litigation generally lose productivity and provide a public spectacle that does not engender respect, in most instances. We must attempt to maintain the balance between the scales of fair play, professionalism and the Golden Rule on the one side and the human problems of ambition, money and even a little paranoia on the other.

John R. Green, M.D.

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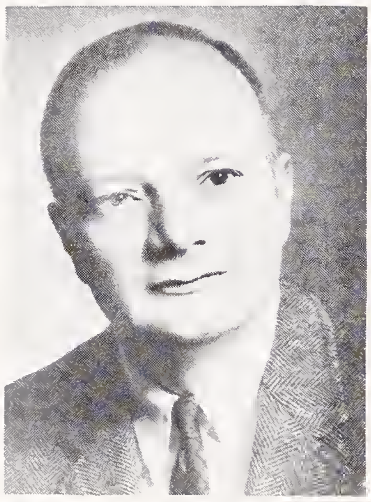

NEAL A. VANSELOW, M.D.

Dean's Page

ENROLLMENT PROJECTIONS

In 1967 the College of Medicine admitted its first class to a traditional four-year curriculum; two years of basic science and two years of clinical clerkships. During these early years we were also in the process of studying our curriculum to determine if there might be more effective ways to produce physicians for the state. By 1972 we had evolved a three-year curricular structure consisting of three phases.

Phase I was conceived as a 48-week basic science block which included the content normally taken in the first two years of medical school. Phase II was devised as a 48-week block consisting of 6 or 12-week clinical clerkships. Phase III was structured as a 36-week block of elective experiences of which a portion were to be clinical and a portion basic science. This curriculum was instituted with the class which entered in 1972.

By the Fall of 1974, both the class admitted in 1971 and the bulk of the class admitted in 1972 under the new curriculum began Phase III, the final phase of our undergraduate curriculum. These students will graduate in May 1975.

The double graduation will impact on the College of Medicine in several interesting ways. One of these ways, of course, will be to reduce the number of students in the clinical Phases of undergraduate education. To take an equivalent number of transfer students at the clinical level would resolve this problem on a short term basis. The question, then, became *how can we effect a long term resolution?*

By studying the effects of our three-year curriculum on students, faculty, and the physical capacity of our facilities, we found that we could increase the size of our entering class (Phase I) to eighty. A projection of this increase coupled with the admission, on a one-time basis, of twenty transfer students into Phase II (the first clinical year) will resolve the short term problem in the clinical years and will provide the basis for a long term solution. The following table illustrates the enrollment we anticipate through 1979-80 under the present plan.

ENROLLMENT PROJECTIONS

Year	Phase I[x]	Phase II	Phase III	Transfers[y]	Total Enrollment[+]	Graduates
73/74	94	111	65	–0–	270	65
74/75	93	72	111	–0–	276	111
75/76	101	92	72	20	265	72
76/77	104	80	92	3	276	92
77/78	104	85	80	5[*]	269	80
78/79	104	85	85	5[*]	274	85
79/80	104	85	85	5[*]	274	85

[*] additional transfers will be accepted to replace losses due to Phase I attrition
[y] transfers will be admitted to Phase II only
[x] new students and students it is projected will take 2 years to complete
[+] includes transfers

Upon completion of our study and the creation of the enrollment plan, we obtained approval for its implementation and worked to determine what qualification would be required for medical students who applied for transfer into Phase II of our undergraduate curriculum.

It became apparent that three areas required consideration: residency, achievement in medical school, and personal qualifications. Achievement in medical school is being measured by two major criteria — performance in all preclinical course work and performance on the National Board Examinations Part I. Personal qualifications are being measured by recommendations from the medical school in which the applicant is matriculated and via personal interviews by our faculty. Residency criteria include U.S. citizenship with preference given to Arizonans and residents of WICHE states which have no M.D. degree-granting schools of medicine (Alaska, Idaho, Montana, Nevada and Wyoming).

The benefits to be gained by combining our three-year basic curriculum and the enrollment projections outlined here will be measured in the increasing number of graduates from the College of Medicine. We believe we have accomplished this at a relatively inconsequential cost to the taxpayers in that these programs have required little, if anything, in the way of additional physical plant and faculty.

We will graduate more students in the next two years than we have in the previous four years. In subsequent years, while this same dramatic statistic will not hold, we will be graduating a significantly larger number of students each year than in the past, simply through utilization of internal resources.

Neal A Vanselow

Obstetrics and Gynecology

CONTRACEPTION

Edward Sattenspiel, M.D.

Whether we have experienced a sexual revolution or rather a sexual evolution in recent years might be the subject of some argument, but there is no question that we have seen a marked liberalization of the attitudes of our culture towards sexual behavior, accompanied by a significantly increased knowledge of the subject by the general public. Concomitant with the changing attitudes of the past 20 years has been the very rapid advance of contraceptive research resulting in the development of new and highly effective methods of contraception, along with the rapid (though not always accurate) dissemination of this information to our patient population through the news media. A generation ago, many physicians rarely discussed this subject with their patients; certainly, most physicians only provided counselling about contraception when the subject was initiated by the patient. Today however, the responsibility to both initiate discussion and prescribe acceptable contraception is that of the physician. In the past five years this responsibility has spread to caring for sexually active teenagers with or without parental consent. From a legal standpoint, there has been a liberalization of laws in nearly every state permitting physicians to offer to knowledgeable and sexually active minors diagnosis and treatment in the areas of contraception, obstetrical care, venereal disease and abortion. Despite old fears about law suits, it has been pointed out by attorneys that no physician has been held liable for damages for providing any beneficial medical service to minors age 15 or older by their own consent, or for giving contraceptive services to those of any age in need of same. The age of majority has dropped to 18 in almost every state, including Arizona. Those under 18 have been extended the right of treatment, if the minor is considered sufficiently mature to understand the treatment and if it is for his or her benefit. Forty-nine of 50 states (Wisconsin excepted) have adopted statutes allowing minors to consent to treatment for venereal disease. Twenty-three states have specific statutes permitting minors to consent to contraceptive services. Although Arizona is not one of these states, the "mature minor" rule mentioned above is considered to be applicable, by most legal authorities, in the absence of specific statutes. Thus, it behooves physicians today to remain abreast of cancer knowledge and developments in the field of contraception and to freely offer care in this area to all eligible patients.

Selections of a method of contraception depends on an appraisal of many different factors. Although the ideal contraceptive has yet to be developed, it must possess certain characteristics. It should be 100% effective yet completely reversible, completely safe and without side effects. It should be simple to use, requiring a minimum of patient effort, motivation and education. There should be no disruption of the libido or interference with the spontaneity of coital behavior. Cost should be low and patient acceptability high, creating no conflict with cultural ideals or taboos.

Although, at present, the pill and the IUD most closely approach the ideal method in most respects, the older traditional methods still fulfill the needs of many couples, and should certainly not be abandoned offhand. It was estimated in 1970 that there were several million users respectively of condoms, diaphragms and aerosol foams in the United States, for example: The condom, a 400-year-old device, remains the only available male contraceptive and with proper usage not only provides highly effective birth control (with a rate of 4-6 pregnancies per 100 man-years of exposure in various series) but also serves as a measure of protection against venereal disease. Diaphragms came into wide usage in this country in the 1920's, functioning both as a mechanical barrier over the cervix and a container for spermacidal cream or jelly. In practice, rates of 6-13 pregnancies per 100 woman-years of exposure have been reported in the U.S. The method does require fitting by the physician, coupled with a high degree of motivation and some degree of skill by the patient.

A variety of materials have been used to create a physical and chemical barrier over the cervix to prevent entrance of spermatozoa. Presently, commercially available in this country are foams, cream, jelly and suppositories. Although all of

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From: 333 W. Thomas Rd., Phoenix, Az. 85013
(Dr. Sattenspiel)

these are highly spermacidal in the laboratory, it has been shown by clinical experiments that foam and cream are more rapidly and effectively distributed over the cervical os and vaginal walls than are vaginal jellies or suppositories. With careful instruction of patients in the proper use of foam and with sufficient patient motivation, a cooperative study reported in 1970 a rate of 3.4-8.4 pregnancies per 100 woman-years of exposure. Other less controlled series reported rates of 1.3-38.7 pregnancies among foam users.

Even the generally less effective measures of post-coital douches, withdrawal, and rhythm provide significant contraception when compared with non-use of any birth control measures. There remain many patients who prefer to rely on any and all of the above traditional methods for personal reasons or because of lack of tolerance of the more effective pills and IUD's. Others have intercourse infrequently and do not particularly demand the high degree of protection afforded by the pills or IUD, or they do not wish to chance the risks or discomforts involved in their use. Therefore the physician should remain cognizant of the effectiveness and proper utilization of all the traditional methods of contraception still in use.

The two most effective methods of contraception are the oral steroid hormones and the intrauterine device. It was estimated in 1970 that of all married couples desiring birth control, approximately one-third (43.2%) used the pill. At that same time, 7.4% of couples used the IUD. The increased use of these methods in the past fifteen years together with an increase in sterilization procedures has been paralleled by a dramatic drop in the number of unwanted pregnancies in the United States. Three forms of oral steroid contraceptives are presently available. The combined type, wherein a combination of an estrogen and a progestogen is taken continuously for 3 out of 4 weeks provides a pregnancy rate of less than 0.2% per 100 woman-years. The sequential type wherein an estrogen alone is taken for 2 weeks, followed by 1 week of the combined pill, provides a pregnancy rate of approximately 0.4% per 100 woman-years. Finally, the third form, or so-called "mini-pill" wherein a low dosage progestogen alone is taken daily without interruption provides a reported pregnancy rate of 2.8% per 100 woman-years. Although pills, especially the combined form, far exceed the traditional methods in effectiveness and convenience, these advantages are countered in some small degree by the deleterious effects on the health and/or sense of well being of the user in a very small percentage of cases. That there are significant systemic effects, other than contraceptive, of the pill cannot be ignored; however their very low incidence and the fact that most of these same effects are twenty-fold more common in pregnancy accrues to the advantage of using pills for contraception.

The intrauterine device is the second most effective contraceptive method presently in use. Polyethylene devices consisting wholly of inert plastic have been associated with the low rate of 2-3 pregnancies per 100 woman-years. Recognition of the antifertility properties of metallic copper within the uterine cavity has led to the development of the copper-bearing IUD's within the past 5 years which have been reported to have the even lower rate of 1-2 pregnancies per 100 woman-years. Lack of systemic effects is one advantage of the IUD, its effects being limited to the female genital tract. Although physician insertion is usually required, once in place the IUD can continue to provide contraception for years. At present, it is recommended that copper bearing devices be replaced after 2 years because of gradual dissolving of the metallic copper; the inert plastic devices have no specific time limitation of usage. There have been recent reports of a small number of severe post-abortal infections, including a few deaths, in patients who conceived with an IUD in place and retained an early pregnancy. One commonly-used device has been at least temporarily removed from the market because of a higher incidence of this problem. However, the total number of such complicated cases reported is less than one hundred, which indicates a very low incidence considering that many million IUD's have been used in this country. Furthermore, immediate removal of an IUD in the event of a pregnancy occurring will serve to avoid this complication.

While even more effective and acceptable forms of contraception will no doubt be developed in the future, including other methods for the male, the physician today is able to offer and discuss with his patients the wide range of methods presently available. His knowledge and counselling should enable those patients to make a reliable and satisfactory choice.

Clinical Oncology In Arizona

This new section in Arizona Medicine is specifically targeted to the subject of cancer care in the state of Arizona. Recognition of the importance of cancer management has been underscored by the establishment of the conquest of cancer as a national goal. In this column, current concepts in cancer management and recent advances in cancer research that are relevant to Arizona, will be discussed each month. Cancer therapy is currently changing at an extraordinarily rapid rate, and the views expressed on this page should not be considered as static recommendations. The editors of this column will select key topics and invite interested physicians and allied health professionals from Arizona to write components related to areas of their expertise in cancer.

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PROGRESS IN ADJUVANT CHEMOTHERAPY OF EARLY BREAST CANCER

Sydney E. Salmon, M.D.

Breast cancer has classically been one of the most vexing of neoplasms, with 75% of women with 1 or more lymph nodes involved detected at the time of surgery dying with metastatic disease within 10 years, despite an initial excellent surgical result.[1] The addition of postoperative radiotherapy to the involved areas has not made an improvement in these statistics.[2] The reason for the high failure rate in patients with lymph node involvement appears to be that micrometastases have spread to areas beyond the primary treatment area weeks or months prior to surgery. Thus, lymph node involvement appears to serve mainly as a reflection of distant disease, rather than indicating as a significant physical or immunological barrier to distant metastasis. Recent results of the National Adjuvant Breast Cancer

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Seminars in Endocrinology and Metabolism

GALACTORRHEA: CLINICAL IMPLICATIONS

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

The presence of breast secretions in the non-puerperal period is thought by most physicians to be abnormal. When these secretions are thought to be milk, the term galactorrhea has been applied. Historically, three clinical syndromes have been described in which galactorrhea is a prominent finding. These include, the del Castillo syndrome, (nulliparous women with amenorrhea and galactorrhea), the Forbes-Albright syndrome, (amenorrhea and galactorrhea due to a pituitary tumor), and the Chiari-Frommel syndrome, (multiparous women in whom amenorrhea and galactorrhea develop postpartum). Unfortunately, these syndromes were described before a clear understanding of their pathophysiology was appreciated. This has diminished the importance of these eponyms. A more realistic approach to diagnosis and treatment of conditions associated with galactorrhea should accrue from a brief review of the underlying endocrine physiology.

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(Dr. Block)

The recent re-awakening of the concept that the endocrine system is under higher central nervous system control than the pituitary gland, has enhanced greatly our understanding of many endocrine syndromes. The hypothalamus which was hypothesized many years ago to be involved in many vegetative processes has now been shown to synthesize and secrete hormones which regulate anterior pituitary function. These releasing "hormones" or "factors" travel down the portal blood system to the anterior pituitary and either inhibit or stimulate the secretion of their respective hormones. In regards to galactorrhea, the recent development of sensitive radioimmuno- and radioreceptor assays for the measurement of serum prolactin, a polypeptide hormone intimately involved in mammary gland milk production, has enhanced greatly our understanding of these processes. Thus, the synthesis and clinical use of thyrotrophin releasing hormone (TRH), which was thought initially to release specifically thyroid stimulating hormone (TSH), resulted in a rise in peripheral levels of serum prolactin. It thus became apparent that this releasing hormone, besides stimulating TSH, also enhanced the secretion of prolactin. It has subsequently been shown that this may indeed be the physiological stimulator of prolactin in man. However, there is additional evidence accumulating that there may be another hormone which has more specificity than TRH. Likewise, a prolactin inhibitory hormone has been hypothesized but not yet synthesized. It would supposedly inhibit the release of prolactin under a variety of clinical circumstances. These hypothalamic hormones are in turn under inhibitory and stimulatory control from higher central nervous system centers which in turn are derived from peripheral nervous system inputs via the spinal cord. Although little is known about these influences, much pharmacological work has been undertaken to elucidate the processes involved. Apparently sympathetic activity, mediated through catecholamine secretion, either inhibit the stimulating hormone(s) or stimulate prolactin inhibitory hormone. This can be demonstrated in man as levels of prolactin decline following the administration of L-dopa, which is a precursor in catecholamine biosynthesis. In contrast, the administration of Thorazine, a phenothiazine derivative, or the tricyclic anti-depressants (Tofranil), which have diffuse central nervous system effects, have resulted in elevated serum prolactin levels.[1] The involvement of serotonin has also been implicated by the finding that tryptophan, a precursor in sertonin biosynthesis, also has the capacity to stimulate prolactin release.[2] In addition to appropriate prolactin levels, the breast, in order to produce milk, needs to be bathed in the appropriate hormonal milieu which includes normal levels of progesterone, estrogen, insulin, thyroid, as well as adrenocortical hormones. Thus, the etiology of galactorrhea can involve disorders at five levels of integration. These involve local conditions of the breast itself, disorders involving sensory nerve input from the breast to the spinal cord, and in turn spinal cord lesions involving these regions, as well as diffuse cerebral lesions, localized hypothalmic or hypophyseal portal venous system disorders and lesions of the pituitary gland itself.

Before ascribing the label galactorrhea to every breast secretion, it is important to differentiate it from other secretions which are not milk. Although there is very little biochemical characterization of galactorrhea fluid, it does have certain characteristics which make it unique.[3] It is usually white in color without being blood-tinged, but may on occasion appear greenish-black. It has a high fat content, especially cholesterol, and it has a unique sugar which no other body fluid contains, lactose. The cellular content is usually minimal and blood or hemoglobin material is usually absent. These latter distinguishing features are obviously important in differentiating milk from the discharge seen in intraductile mammary carcinoma and fibrocystic disease of the breast. Although galactorrhea is usually bilateral, it can occur unilaterally making its differentiation from other local causes difficult. Likewise, quantities can vary from drops to cupsfull daily. Once this distinction is made, a search for a predisposing cause can be undertaken systematically.

Peripheral nerve lesions such as herpes zoster have been associated with galactorrhea. The vesicles of this condition and their distribution help in the differential diagnosis. Nerve damage following thorocotomies for cardiopulmonary disease can also produce galactorrhea. Similarly, spinal cord lesions which interfere with nerve transmission from this area can precipitate this syndrome. For instance, syringomyelia has been incriminated. Appropriate neurological testing can detect its presence. Ascension of the central nervous system with more diffuse disease such as viral encephalitides, bacterial meningitides or degenerative demyelinating diseases have been reported in association with galactorrhea. Tumors in the hypothalamus have been associated with the production of prolactin and in some cases galactorrhea. As noted above, in addition to prolactin various other hormones are necessary for the production of milk and thus, although prolactin levels can be elevated it does not necessarily mean that galactorrhea will be present. Various granulomatous diseases affecting the hypothalamus and/or the hypophyseal portal venous system have also been associated with hyperprolactinemia, i.e., sarcoidosis and Histiocytosis.[1] Likewise, the previous treatment of diabetic retinopathy by pituitary stalk section interrupted the hypophyseal portal blood system resulting in elevated serum prolactin levels and galactorrhea in some patients. Tumors of the pituitary gland secreting predominantly prolactin need also to be considered. These usually produce very high levels of prolactin which can be easily measured. These tumors can be obvious on lateral skull x-rays or may be very small. Complete visual field determinations as well as tomograms of the sella region in addition to pneumoencephalogram studies may be needed to assess these lesions which can be exceedingly small. Studies of other anterior pituitary hormone systems should probably also be undertaken in patients with very high basal serum prolactin levels. Furthermore, autonomy of basal secretion can be assessed by demonstrating lack of suppression following oral L-dopa administration, which as noted above normally inhibits prolactin secretion. As with other hormones, ectopic production of prolactin by carcinomas have been reported and must be kept in mind when high prolactin levels are found.

In addition, it has become apparent that some medications are associated with the production of hyperprolactinemia and/or galactorrhea as mentioned earlier. The phenothiazines used widely in psychiatry have been noted to stimulate prolactin release and can be associated with the development of galactorrhea. Since phenothiazine derivatives are finding wider use such as anti-emetics (Compazine), a careful history of drug ingestion is necessary in evaluating the patient with inappropriate breast secretions. Drugs used for hypertension such as reserpine, guanethidine and Aldomet have been associated with hyperprolactinemia. In more widespread use than these are the hormonal birth control medications. Apparently either the estrogen and/or the progesterone predisposes the breast to the development of galactorrhea even in the presence of normal prolactin levels.

Finally, there are a group of patients in whom a functional derangement in hypothalamic-pituitary function has been incriminated. Some patients with hypothyroidism, for instance, have been shown to have high prolactin levels. It is thought that elevated TRH levels in this disorder stimulate not only TSH but also prolactin release.[4] A patient with primary adrenocortical insufficiency has been described with galactorrhea and amenorrhea which disappeared with physiological replacement doses of cortisol.[5] Furthermore, there probably is a much larger group of patients in whom galactorrhea occurs in which basal, stimulated and suppressed serum prolactin levels are normal. Evaluation of other anterior pituitary functions, skull radiographs, and, in some cases, pneumoencephalograms, have failed to find an etiology for their condition. Although only few such patients have been extensively studied, it would appear that of those reported, the condition may be benign.[6] However, long-term followup of such patients is needed before surveillance can be discontinued, since there are reports of patients who initially present with only amenorrhea and galactorrhea who then go on to develop a pituitary tumor.[7]

In summary then, the more obvious causes of glactorrhea can be readily excluded by history and physical examination alone. More sophisticated studies utilizing endocrinological, radiological, and neurological techniques will be needed for the more esoteric causes. These latter procedures are beyond the scope of this presentation, but should be undertaken when the more common and obvious causes of galactorrhea have been excluded.

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Editorial

CIRCUS

WILLIAM B. McGRATH, M.D.

Religion and human vanity dispose us to emphasize the distinctions between man and the so-called lower animals. As a matter of fact the similarities infinitely outnumber the differences. Almost anything observed in the human, whether as individual or tribe, can be found in other mammals or in some species of insect or fish or bird. There is no missing link.

In the bank of knowledge we gather around the brightly lighted table of psychological theories and experiments. The theories are mostly words about words and the experiments are picayune: rats in their mazes and pigeons pecking levers for pellets of food. (A cartoon depicts a couple caged white mice and one is saying to the other: "See how I have the scientist conditioned? Whenever I push this button he doles out a morsel of food.") We are narrow-minded, tunnel-visioned.

Unopened is a vault in which is preserved an enormous fund of information about behavior and its modification or control. It is the circus.

Since the hippodromes of ancient Greece and the amphitheatres of Rome, spectators have marvelled at the obedience and cooperation of huge beasts of burden and ferocious carnivorae.

A characteristic of the circus is a relative wordlessness. Everything is rhythmic and nonverbal. This is why a Russian or Italian troupe can perform and be appreciated in any country of the world.

But the wordlessness is also why the skills are not spelled out in textbooks or otherwise codified. They are kept in the family and handed down from one generation to the next.

Self-proclaimed experts on behavior, who among us could even begin to train a Lipizzaner in dressage or make an elephant dance or drive a tiger through a flaming hoop? In the ring of the circus, traditionally forty-two feet in diameter, the most scholarly judge or the most experienced psychiatrist would be torn to pieces. It is no place for an amateur.

The real professional follows step by patient step a system in which there is no room for error. Each part of a complicated act, each link in the sequence, must have rigidly predetermined consequences and the timing must be exact.

Two thousand years ago the animal trainer could have told us that punishment plays practically no part in behavior modification. One does not beat a lion or performing whale or ground him or take away his privileges. The rewards which reinforce desirable behavior can be quite small if only they are predictable and immediate. Under a circular tent in the middle of Europe we could learn that regression is the inevitable result of uncertainty or inconsistency or delay. The immediate consequence of any act determines whether it will be repeated. One could learn more in the winter training quarters of the circus than in six years at Harvard.

We recognize the astounding success of the animal trainer and we have some vague notions about his methods. Yet we go right on refusing to acquire and apply such knowledge to human behavior. There just is not that big a difference between man and any other animal.

When we are ridiculously inconsistent we rationalize that we must not be rigid. Why not? When we compromise and temporize we say that we are being humane. That word, humane, ought for a long time be expunged from our vocabulary. It has become synonymous with confusing. Only those methods which work effectively in the care and training of animals will work effectively with people. Anything that will confuse or frighten an animal and make it vicious will do the same to a person.

We are not fanatic behaviorists and neither are we atheistic or permissive. And we are quite mindful of the complexities of the human and his environment.

But religion and medicine and the law are not preventing or curing psychopathic behavior. We are causing it. We are inviting and reinforcing it.

Paternalistic attitudes in the churches and courts and schools tend only to perpetuate that amoral egocentricity which is originally shared by children and psychopaths and untrained animals. A teacher, for example, should not say to a student: "I am failing you because you did not turn in your assignments." This subtly makes the teacher seem partly to blame, as if it were his decision which carried responsibility for the result of the child's own negligence. The ambiguity ("I am failing you") is not lost on the child. Put the burden where it belongs: "You flunked." Similarly, a judge should not word it: "The Court is sentencing you to a year in the county jail." We want to stress that it is the crime and not the Court which is the primary cause of the confinement. Scolding and rebuking sermons by the judge only engender childishness and perpetuate the established conflict or schism between authority and the rebelling individual. It is a defeating custom always to think of "We, the good guys, and they, the bad guys." The more dispassionate and impersonal the attitude of authority, the more respected it will be, influencing the errant person to accept exclusive, unilateral responsibility for the consequences of his behavior.

Society, heretofore so negativistic and perverse, will have to take a laxative of humility. It must begin to apply to a revolutionary extent that oldest and most important principle: to reward good behavior and thereby to extinguish bad. Volumes are written about punishment and not a pamphlet on reward. By ignoring good conduct we practically extinguish its incentives. Do you realize that a person can live a dutiful life of fifty or sixty years and never see even a token of credit or appreciation?

Space permits only a few small suggestions. There should be a tag on your license plate indicating that you have driven five or ten or twenty years without a citation; and in such a case, you should be excused from having to renew your driver's license. Actually there should be many more credit citations for courteous driving than penalties for traffic violations.

The cooperative prisoner will get dessert. The children who are punctual will have a cup of hot chocolate. On the menu of a restaurant should be printed: "Please tip only according to the quality of the service." The senior student who refrains from drinking or smoking or using drugs should have a week's free evening use of a demonstrator car from an automobile agency.

How habitually negative we are! In the construction business one stipulates a penalty for delayed completion but never even thinks of a bonus to be shared by the workmen for keeping ahead of schedule.

With some imagination we could find a hundred ways in which a citizen could be enabled and encouraged to merit special elitisms, and they should include identifying emblems and corresponding privileges and deferences. If half the budget of law enforcement were devoted to rewards for good behavior, there might well be half the amount of crime.

The pat on the head, the wordless gesture of approval, the tid-bit reward, will work any of the wonders which we applaud at the circus. In teaching either a puppy or a cub or a child to shake hands we have the same reasons and we have to use the same methods to get the same results.

Topics Of Current Medical Interest

ARIZONA MALPRACTICE CASES FOR THE LAST FOUR MONTHS OF 1974

HOPEFULLY, THE FOLLOWING ACTUAL CASES CAN BE A LEARNING EXPERIENCE TO ALL ARIZONA PHYSICIANS.

Hopefully the following actual cases can be a learning experience to all Arizona physicians.

1. Female — 37 years. Patient injured at work and suffered cervical strain. Seen and treated by qualified Neurosurgeon who refused to overtreat patient and so informed her. Subsequent surgery done by D.O. led patient to believe initial diagnosis was wrong. Hospital records strongly suggest subsequent surgery not only unsuccessful but probably unnecessary.
2. Female — 37 years. I.M. injection of Lincocin into left deltoid with secondary fat necrosis. Depressed cosmetic defect 6 x 2½ cm. Injection given too low in deltoid area rather than in thick part of muscle.
2. Female — 14 years. Puncture wound of left eye with loss of vision within twenty-four hours. Orbital abscess diagnosed three days later followed by death five days later. At autopsy — a stem from an oleander bush had gone through the Superior Orbital fissure into the Cavernous sinus and a stem 1⅞ x ⅞ of an inch found in the sinus. Charge has been made that there was failure to identify a foreign body. X-rays were negative and this case could be classified as a medical rarity.
4. Female — 43 years. Anesthesia being given by nurse with no endotracheal tube. Questioned on two occasions by surgeon who is concerned regarding color of blood. Cardiac arrest with death five weeks later. Infrequent blood pressure recordings by anesthetist and delay in recognition of arrest.
5. Female — 29 years. Surgery done for stress incontinence. Possibility exists that procedure chosen was inappropriate for this particular patient and peer review requested.
6. Female — 68 years. Foreign body — hemostat left in abdomen. Exposure is present for the surgeon. Hospital involved was not doing instrument counts. These are becoming more common locally.
7. Infant — Death secondary to Strep. B Meningitis. Child died from overwhelming infection with no exposure indicated for either hospital or doctor.
8. Male — 53 years. Allegation is failure to diagnose Valley Fever. Patient was promptly hospitalized and adequate consultations obtained, etc. There appears to be no exposure but local review with Internist suggested.
9. Male — 33 years. Ulnar nerve injury occurred during surgery. Improper positioning of arm against sharp surface is reasonable and admitted cause. The anesthetist has assumed responsibility.
10. Female — 58 years. Cardiac arrest during surgery. Promptly recognized and treated successfully with no resulting exposure. No pre-op. EKG done which should be routine in a patient this age.
11. Female — 49 years. Patient with glaucoma and diabetes; had unsuccessful cataract surgery by qualified Ophthalmologist. Surgery technically good but no improvement in vision because of underlying retinopathy.
12. Male — 20 years. Sustained laceration on dorsum of left hand. Three days later a second physician found that the extensor tendon has been severed. The harmful effect in this case was slight.
13. Male — 20 years. Suffered severe brain contusion with subsequent psychiatric disturbance. Later admitted to psychiatric service and records describe him as disoriented, etc. The patient was allowed on an open ward and either fell or jumped sustaining a fractured spine.

Proper therapeutic restraint of a patient requires that the force used must be reasonable and only to a degree needed to protect the patient from either self-injury or from injuring others. Restraints range from peaceful persuasion by attendants and nurses to the administration of sedatives or to confinement in locked areas.

14. Female — 77 years. History of dizziness and confusion. Suffered fracture of the hip as a result of a hospital fall. Responsibility exists for the hospital for failure to restrain patient.
15. Female — 25 years. Lump in breast noted in August, 1972, and again in December. Multiple office visits during pregnancy in 1973 with no mention of any breast examination being done. Cancer of the breast diagnosed on a single examination by a second physician in December, 1973.
16. Male — 57 years. Ureteral catheter incompletely removed by surgeon in September, 1973. Later on catheter remnant, which measured 25 cm., was found and removed. There is a claim that some kidney damage resulted from this misadventure and exposure exists for both the hospital and the surgeon.
17. Male — 30 years. Sustained skin slough secondary to injection of calcium chloride. This was supposed to have been given intravenously by a hospital nurse and secondary skin grafting was required.
18. Female — 28 years. Had mild temperature increase; was packed in ice because the hypothermia machine was not working. A "considerate" nurse sprinkled salt on the ice with the result that the patient received burns of both lower extremeties which may require plastic surgery.
19. Female — 41 years. Operated upon with preoperative diagnosis of cancer of the pancreas. Extremely poor workup and very questionable indications for surgery. Thorough medical investigation not provided preoperatively and surgery may be listed as unnecessary. No surgical lesion was ever found.
20. Female — 33 years. Admitted following auto accident. Left ovarian cyst unrelated to accident diagnosed and a week later the cyst was removed along with a section of ureter. Concern exists concerning the actual need for the surgery as well as for the ureteral injury.

MALPRACTICE — A NATIONAL VIEW

Statement by Casper W. Weinberger, Secretary of Health, Education and Welfare

The increasing difficulty physicians have in obtaining medical malpractice insurance at any price has reached crisis proportions in the United States. Physicians in at least seven states face the prospect of not being able to obtain malpractice insurance when their present policies expire. The loss of insurance coverage for physicians would have an immediate impact on the public's access to quality health care. It would most certainly drive up the cost of medical care even further, and it would increase the number of tests and procedures ordered by physicians solely to protect themselves. At present the cost of malpractice insurance to physicians ranges from about $3,000 to over $20,000 a year, with surgical specialties being the most expensive. These high malpractice insurance premiums and the defensive medicine which results costs the public between 3 billion dollars and 7 billion dollars a year.

Medical malpractice insurance, like professional licensure, is a state responsibility, but because the federal government has assumed the responsibility for the health care needs of some 23.5 million senior citizens through Medicare and 28.6 million people through Medicaid, by underwriting much of the cost, we have a responsibility to see that no situation persists which seriously threatens the ability of these persons to obtain health care. That is why I recently asked the Department to begin an intense study of the present malpractice problem, to determine what the federal government could or should do. We will, of course, use the findings of the Secretary's Commision on Medical Malpractice in the course of this new effort.

Early in December at the direction of Assistant Secretary for Health, Dr. Charles C. Edwards, we convened a group of physicians and hospital administrators knowledgeable about the malpractice problem to advise us. Under the chairmanship of Dr. Roger O. Egeberg, Special Assistant to the Secretary, the group recommended three actions which the Department might take: 1) develop contingency plans such as federal reinsurance, should malpractice insurance be discontinued for a large part of the profession in any state, 2) obtain solid information necessary to evaluate the specific aspects and scope of injuries caused by actual malpractice, 3) develop guidelines for model legislation aimed at improving the present state laws on malpractice. Work is now underway within the Public Health Service to carry out all three recommendations.

The group also recommended that we hold separate meetings with insurance companies that write malpractice insurance. Shortly before Christmas, meetings were held with St. Paul, Aetna, Employer's Insurance of Wausaw, Argonaut, and Chubb and Son Companies. We will invite them and other industry representatives to Washington for further discussions as soon as possible.

Therefore, I urge insurance companies writing malpractice insurance to take no precipitous action which would deny coverage to physicians. I also urge all of these companies to develop alternative means of providing coverage to physicians such as through one or more consortiums which would serve all high-risk physicians. I offer the good offices of the Department to help in this effort to try to secure prompt anti-trust clearance for any proposal which might evolve from such meetings, which would be held at the request of the government. By so spreading the risk, it may be possible to continue writing malpractice insurance for physicians until the states, insurance companies, the health professions and the federal government determine other more permanent solutions to the problem. In addition, we will send a full report on the present situation, plus our recommendations for federal, state, and private action to the President and the Congress as soon as possible in January.

I am personally convinced that the states and the private sector can resolve the present crisis and find permanent solutions to this medical malpractice problem. In the long run, more attention must be paid to the process of mediation and arbitration, and standards and criteria for judging the quality of medical care must become more precise. In this latter area we believe our Department has already made a significant start through federally assisted Professional Standards Review Organizations, the local groups of physicians who review medical care given to Medicare and Medicaid patients. I would like to see states adopt the rule that physicians and others who adhere to standards of care adopted by local PSRO's will be able to assert this as a real defense to a malpractice suit and thus reduce materially the cost of unnecessary defensive medical practice. But it may be several years before than can happen.

In the meantime, this Department will continue to exert every effort to help find solutions to the medical malpractice insurance crisis. We will take whatever steps are necessary to see that Americans are not denied needed health care because of this crisis.

December 27, 1974

ArMA
Medical History

ARIZONA MENTAL HEALTH IN TERRITORIAL DAYS

PART III

Dry Gulch Jake

1981 – 16th Assembly
Message from Governor Louis Wolfley

I submit herewith the reports of the Board of Directors and the Superintendent of the Insane Asylum, which set forth fully the condition of the institution. I recommend that an investigating committee be appointed to examine and report upon the condition of the building and grounds, and for the purpose of making suggestions for Legislative action.

A HINT OF FURTHER TROUBLE ,THIS TIME WITH THE PHYSICAL PLANT. NO ACTION WAS TAKEN ON THIS RECOMMENDATION DURING THE 17TH ASSEMBLY. THE BOARD OF DIRECTORS DID NOT MENTION THIS IN ITS REPORT TO THE GOVERNOR.

Report from Superintendent J. Miller, M.D. to the Board of Directors of the Insane Asylum – Feb. 10, 1893.

I would respectfully request your Honorable Board to ask for some legislation prohibiting the committing of non-insane persons to the Asylum. During the past year several cases have occurred where petty criminals or other objectionable characters, not insane, have been committed here by Probate Courts, apparently for the sole reason of getting rid of them. The result of this practice if permitted, must be bad. It lays the Superintendent liable to suits for damages and gives the individuals so committed a license to commit crimes under the plea of insanity.

A statutory limit should be fixed in which the sanity or insanity of an individual committed to the Asylum may determined, thus relieving the Superintendent of the liability of damage suits. I suggest thirty days as such a period.

A REPORT TO THE BOARD, BY ARCHITECT W. A. McGINNIS, SUGGESED INFERIOR CONSTRUCTION BROUGHT ABOUT THE DELAPIDATED CONDITION OF THE ASYLUM BUILDING. THE BOARD DID INCLUDE THE ARCHITECT'S REPORT IN ITS RECOMMENDATIONS, AND SUPPORTED THE RECOMMENDATIONS FOR BUILDING REPAIRS.

I would suggest that your Honorable Board recommend to his Excellency the Governor of Arizona and the Legislature, appropriations for the following purpose, viz:

A foundation of stone should be put under the entire Asylum building with an area and retain-ing wall.

Iron ceilings should be put in the five remaining wards.

Steam should be utilized for heating the building on the ground of safety, economy and comfort to the patients.

The roof on the entire building leaks, destroying the plastering in nearly all the upper rooms and halls, and requires attention.

The entire building is delapidated and calls for repairs.

A new steam boiler is required. The one now in use is worn out, full of scale, and unsafe.

The sewage system of this hospital remains an unsolved problem. The present system consists in running the sewage into a cesspool and then pumping it out again upon the land, where in the hot sun it develops disease germs and a stench that at times is almost intolerable. In case of an accident to our pump, which has occurred several times, the back flow deluges our kitchen with a combination of all the filth of the House.

I most earnestly hope your Honorable Board will secure an appropriation sufficient to build a sewer to the river and thus end the expense and annoyance of this much vexed problem.

THE GOVERNOR CONCURRED, AND SUPPORTED THE BOARD'S RECOMMENDATIONS.

1893 – 17th Assembly
Message from Governor N. O. Murphy

From personal observation, as well as from reports of the officers, I am convinced that in order to protect and preserve Territorial property, it is clearly in the interest of wise economy that provision be at once made by you to improve the foundation of the asylum building, repair ceilings, and for proper sewerage, and lighting and watering the institution, and I earnestly approve the recommendations of the Board of Directors in this respect.

THE BOARD OF DIRECTORS ASKED FOR $24,600 FOR IMPROVEMENTS. THE LEGISLATURE, ON THE RECOMMENDATION OF GOVERNOR LOUIS C. HUGHES, APPROPRIATED $28,000. GOVERNOR HUGHES WAS ALSO COGNIZANT OF FISCAL NECESSITIES. WAS IT ALSO AN ELECTION YEAR?

1895 – 18th Assembly
Message from Governor Louis C. Hughes

All political parties are pledged to retrenchment and economy in the administration of public affairs, and in the reduction of taxation. You have now the opportunity to make good this pledge. You are no doubt willing to keep good faith with your constituents. How can this be accomplished? Abolish all offices not absolutely necessary.

Remove, as far as possible, the cost of maintaining our penitentiary, insane asylum, our criminal courts and jails by abolishing, curtailing or restraining the chief cause of crime – strong drink.

In the interest of retrenchment and economy in the public service, I recommend the abolishment of the Territorial Boards of Prison, Insane Asylum and Reform School, and in lieu thereof the creation of a non-partisan board of control, the majority composed of Territorial officers who are required to give their entire time to the public service. Under the present system the Territory is fortunate in having exceptionally efficient and honorable men constituting these commissions – men of business affairs, who, in the performance of their official trusts, have sacrificed their personal business interests. These duties call them together monthly or quarterly, as fixed by law. As a rule, when they meet, they are greatly hurried or rushed; they do not devote sufficient of their time to the institutions or interests in their official keeping, hence they depend almost entirely upon the suggestions of the superintendents. Fortunately the present superintendents are men of high character and especial fitness for the duties assigned them, so that no harm results; but, by the Legislature creating a board of control, such as I suggest, expensive commissions could be dispensed with, thus saving the Territory annually about $12,000. The deficit of the Territory aggregates about a like sum. Your attention is called to these facts.

THIS RECOMMENDATION WAS PUT INTO EFFECT AND THE INSANE ASYLUM WAS DIRECTED BY A BOARD OF CONTROL MUCH LATER, WHEN THE LEGISLATURE REINSTATED A BOARD OF DIRECTORS FOR THE STATE HOSPITAL.

SUPERINTENDENT MILLER LEFT AND WAS REPLACED BY DR. IRA B. HAMBLIN, WHO REMAINED WITH THE ASYLUM FOR 18 MONTHS AND MADE NO REPORT TO THE BOARD OF CONTROL OR TO THE GOVERNOR. HE, IN TURN WAS REPLACED BY H. A. HUGHES, WHO MADE A RE-

PORT DIRECTLY TO THE GOVERNOR, INDICATING HIS DISPLEASURE AT THE CONDITIONS FOUND AT THE ASYLUM.

Excerpts from a Report of the Superintendent of the Insane Asylum, December 31, 1896

In compliance with legal requirements I have the honor to present your Excellency the Fifth Biennial Report of the Arizona Insane Asylum, which I have deemed best to divide into two sections, the first section covering the first eighteen months of the period under the superintendence of Dr. Ira B. Hamblin, which I think is complete and intelligent as far as the business records are concerned.

Regarding the history and statistical records of the institution during that period, it is very incomplete, but the best that could possibly be done with the material left by my predecessor. A fact you will understand when you are informed that these is not an entry made in the daily report book from October 31st, 1894, to November 1,st 1895. By the commitment papers covering that period and the few imperfect notes I have been able to find there are ten males and one female patient entirely unaccounted for. There are no records of the death of patients who are known to have died, and others who are known to have escaped are reported discharged. For information I therefore consider the Asylum records of that part of this biennial period as worthless, as a part of the history of this institution.

This condition of affairs will doubtless suggest to you the necessity of a law compelling a retiring Superintendent to make a report in full to the Governor of the condition of the institution up to the date of his retirement.

The percapita cost of maintenance during the last six months is four cents less than the preceeding six months and eleven cents less than for the first half of this biennial period. This too, notwithstanding we come to an empty larder and the supply of clothing so meagre that after taking careful invoice, one of our leading clothiers estimated the value of the entire lot at fifty dollars. I have endeavored to use economy in the management of the Asylum, but the comfort and welfare of the unfortunates who are under my charge must not be lost sight of or even take a second place in my consideration.

Since assuming charge of the institution the first day of July last, we have instituted several important changes with a view to benefit and add to the comfort of our patients. The greatest amount of liberty possible consistent with safety to themselves and others had been granted the patients and they have been encouraged to do light work about the premises and spend as much time outside the wards as possible.

THE UNSAFE FOUNDATION WALLS, SEWERAGE, AND A BETTER PLANT FOR HEATING AND COOLING HAD BEEN INSTALLED, BUT MUCH REPAIR WORK PREVIOUSLY MENTION IN THE SUPERINTENDENT'S REPORT IN 1893 WAS STILL LEFT UNDONE, INCLUDING NEW CEILINGS, CEMENT FLOORS, AND EXTENSIVE REPLASTERING.

The steam heaters, which had been such a failure that stoves had to replace them in the wards, have been replaced by competent workmen, and the entire work done over, so that they are now giving entire satisfaction, heating the wards comfortably, and are much safer and better in every way.

Today we find the following improvements are absolute necessities for the accommodation of our increasing population, and for the protection of the property.

We now have one hundred and fifty patients housed in four wards intended for one hundred persons, some of the rooms ten by fifteen feet have six beds in them. This is incompatible with the rules of hygiene and should not be. The two basement wards can be put in order for occupancy by cementing the floors and plastering the walls. Estimate cost of same, $1,200.

The door casings were never properly put in and are not safe and should be replaced by new casings throughout the six wards.

1897 — 19th Assembly
Message from Governor B. J. Franklin

While by strict economy and careful management it is probable that the present revenues would meet the current expenses, yet the margin is small and no provision is made to create a sinking fund to pay Asylum and other bonds as they fall due. $20,000 of Insane Asylum Bonds are now subject to call and they mature at the rate of $10,000 per annum until 1905.

Reprinted with permission of the Palo Verde Foundation for Mental Health from Arizona Psychiatry, "Arizona Mental Health In Territorial days" Part III, Vol. 1, Number 3, 1971, pg. 11-14.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of The Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, November 23, 1974, a quorum being present, convened at 1:46 p.m., William G. Payne, M.D., President and Chairman, presiding.

MINUTES

The minutes of the meeting held September 21, 1974 were approved as distributed.

ASSOCIATE DEAN FOR CONTINUING MEDICAL EDUCATION

Robert C. Davidson, M.D., candidate for the subject position reviewed his background and recent activities in the Northwest. Considerable discussion ensued on various medical education activities in Arizona.

AMA LEADERSHIP CONFERENCE

It was determined that the President, President-Elect and Executive Director would represent the Association at this conference on January 24-26, 1975.

DEPARTMENT OF HEALTH SERVICES

Dr. Schamadan reviewed activities of the Department of Health Services including the current status of the Medicaid program, comprehensive health planning services, crippled children's law suit, the new paramedic program, the Arizona Plan for Health Services. He also indicated that the Department will become increasingly involved in areas of aging, environmental health and occupational health.

MEDICAL SERVICES RELATIVE VALUE GUIDE

It was moved and carried to indicate interest in the development of a medical services relative value guide as proposed by Patrick P. Moraca, M.D., the matter to be referred to the Medical Economics Committee for review and report.

UNDERWRITING REVIEW

Case Review

The Committee reviewed four cases and made appropriate determinations.

Procedures

The Committee reviewed and approved the revised "ArMA — Procedure and Routing for Underwriting Review" document, to be effective December 1, 1974.

Reaffrmation of Interest

Mr. Robinson reviewed the Travelers' letter of October 7, 1974 as follows:

> "I am not unmindful of your request for us to restate or reaffirm our relationship with ArMA.
>
> Since the inception of the ArMA program, the market for Professional Liability has, as you know, changed drastically. Many prominent carriers have terminated coverage, while others have practically eliminated their writings, or have increased their rates substantially and limited coverage.
>
> We feel our potential for successful underwriting results in the Professional Liability tie in the area of State or County Associations, such as ArMA, as opposed to individual accounts. This is not to say that we will not entertain an individual account which meets our underwriting standards, but we have no desire to increase our volume of business on this basis.
>
> Considering the present deteriorating market, The Travelers does not want to be added to the list of Companies restricting this coverage, but at the same time we do not wish to become a major writer simply because we are the only carrier still accepting new business.
>
> We are continuously requested by new Associations, or Agencies to become involved in their State or County, especially when they appear to be having severe marketing problems. To date, we have deferred their offering, being content to handle the four formal programs now in force.
>
> The ArMA program is progressing well and we have every indication of living up to our commitments as originally established. Our need for adequate rate levels, responsive underwriting and peer review, increased Association involvement, and continued high level participation by members are all essential factors in the program. Serious deterioration in any of these fields could cause re-examination of the program. Between ArMA, IMI, and ourselves, we should be able to correct any deficiencies, and on an acceptable basis to all.
>
> Your involvement and that of our Producers in establishing the Underwriting and Peer Review programs now under consideration is much appreciated, as well as your involvement in Claim review procedures. It is activity such as this that creates successful results, and promotes harmony in developing solutions in problem areas.
>
> Bruce, I would hope these comments make our position clear to you and your Association. We look forward to a continuing successful program."

AMA REORGANIZATION

Daniel T. Cloud, M.D. reviewed the entire background of the plans for a dues increase and reorganization at the AMA. He was invited to make a similar presentation to the Board of Directors at their next meeting. Mr. Edwin Smith also commented on the field staff changes.

It was moved and carried to recommend to the Board of Directors that they not instruct our AMA delegates on how to vote at the Portland meeting.

ANNUAL MEETING EXPENSES

Mr. Robinson reviewed the fees that would have to be charged for annual meeting activities due to the higher costs of having the meeting in Tucson. APPROVED.

AMA RESIDENCIES AND D.O. MEMBER

The Committee reviewed the matter of one of our Osteopathic members who is having trouble getting accepted into a local residency program. It was determined to advise the DME as to AMA's response with copies to our member.

SUIT AGAINST BLUE SHIELD

David C. James, M.D.'s letter of October 22, 1974 soliciting funds for a proposed suit against Arizona Blue Shield was received for information.

COLLEGE OF MEDICINE

The telegram from Senora Jacobo DeLeon regarding the College of Medicine was reviewed. It was determined to respond in the affirmative.

ARIZONA STATE PRISON

The letter from David C. Tierney, Chairman, State Bar Special Committee on Corrections and Rehabilitation dated November 20, 1974 requesting the Association to conduct a review of the medical facilities at the Arizona State Prison was reviewed.

It was moved and carried to ask Elmer L. Heap, M.D. to form a small Ad Hoc Committee to review this matter and report back through the Professional Committee.

BOARD OF DIRECTORS AGENDA

The Committee reviewed the agenda for the Board of Directors meeting on November 24, 1974 and prepared various recommendations.

Meeting adjourned.

William E. Crisp, M.D.
Secretary

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Sunday, November 24, 1974, a quorum being present, convened at 10:07 a.m., William G. Payne, M.D., President and Chairman, presiding.

WELCOME

Dr. Payne extended welcome to the county medical society presidents and various other guests.

MINUTES

The minutes of the meeting held September 21, 1974 were approved as distributed.

ArMPAC

Dr. Langston reported that 62.9% of the candidates supported by ArMPAC were elected. ArMPAC contributed $31,800.00 to: one U.S. Senate candidate; three U.S. Representatives; and to 23 candidates for state office.

BOARD OF DIRECTORS

Resolution 1-74 – Anesthesia Practices

William E. Cain, M.D., Secretary of the Arizona Society of Anesthesiologists, presented a suggested change to portions of the subject resolution, suggesting that the following be substituted at line 9 of the original resolution:

"WHEREAS, The ASA 1974 House of Delegates instructed committee action to better delineate and refine the "Guidelines to the Ethical Practice of Anesthesiology" and present the findings for action by the 1975 ASA House of Delegates; and

WHEREAS, The Arizona State Society of Anesthesiologists has a current committee (The Executive Committee) to investigate and act on alleged misconduct of an anesthesiologist regarding ethical practice; therefore be it

RESOLVED, That complaints regarding the ethical practice of anesthesiology be referred to the Arizona State Society of Anesthesiologists for action; and be it further

RESOLVED, That the State Society of Anesthesiologists reply to the Arizona Medical Association within six months regarding disposition and findings and, if necessary, offer recommendations to the Arizona Medical Association should further action by them seem necessary."

A great deal of discussion ensued, with a number of motions proposed and withdrawn, all resulting in the following two resolutions:

It was moved and carried to implement Resolution 1-74 as the policy of this Association and to so report to the House of Delegates at the 1975 meeting. The policy is as follows:

"RESOLVED, That no physician may bill for an anesthetic not given by him unless such bill states that the anesthetic was administered by a nurse anesthetist; and be it further

RESOLVED, That any physician who collects fees for a nurse anesthetist's work without the patient being made aware in writing before and/or after the anesthetic that their anesthesia was given by a nurse anesthetist is unethical; and be it further

RESOLVED, That any physician who collects a fee for a nurse's anesthesia without being immediately available for consultation when the patient is under anesthesia is guilty of unethical practice."

It was moved and carried to extend appreciation to the Arizona Society of Anesthesiologists for their interest in this matter and to advise them that we will call upon them for assistance in the future when matters of this type arise. Further, we ask them to feel free to submit resolutions to the House of Delegates should changes occur in ASA guidelines in the future.

Malpractice Rates

The board received for information the following information regarding current malpractice rates:

> "Tangible membership benefits are important to us all. Our ArMA/Travelers Professional Liability Insurance Program is about as tangible as you can get. ArMA members, and only ArMA members, average an annual premium savings of $1,137.20 per year when compared with other major malpractice insurance carriers writing business in Arizona. Besides the significant dollar savings, there are other advantages such as a five year guarantee of the program

to the Association, full disclosure of the Association, an educational program and others. Compare and enjoy, it really makes paying our ArMA dues worth it.

Insurance Class	ArMA Travelers 7/1/74*	The Other Carrier 9/1/74*	Annual Savings
Class I	750.00	2,407.00	1,657.00
Class II	1,255.00	2,586.00	1,331.00
Class III	2,667.00	3,704.00	1,037.00
Class IV	3,468.00	4,693.00	1,225.00
Class V	4,345.00	4,783.00	438.00

AVERAGE ANNUAL SAVINGS $1,137.20

* Based on $1,100,000.00 occurrence limit
$1,300,000.00 aggregate limit
**Based on $1,000,000.00 occurrence limit
$1,000,000.00 aggregate limit

ONE OF MANY MEMBERSHIP SERVICES
OFFERED BY YOUR
ARIZONA MEDICAL ASSOCIATION”

EXECUTIVE COMMITTEE

Ad hoc Committee on Data Collection and Analysis

It was moved and carried to establish the Section on Data Collection and Analysis of the Maternal and Child Health Care Committee as a free standing ad hoc committee with the following membership:

William J. Moore, M.D., Chairman
Frederic W. Baum, M.D.
William K. Carlile, M.D.
William J. Dorson, Ph.D.
Glenn M. Friedman, M.D.
Alan Humphrey, M.D.
Belton P. Meyer, M.D.
Hermann S. Rhu, M.D.
Ted J. Stuart, M.D.
James M. Hurley, M.D.

Membership Classification Changes Approved

(1) Maricopa County
  (a) Monroe H. Green, M.D. — Active to Active over 70 — Account age — Dues exempt — Effective 1/1/75.
  (b) Karl E. Voldeng, M.D. — Active to Active over 70 — Account age — Dues exempt — Effective 1/1/75.
  (c) Ernest S. Watson, M.D. — Active to Associate — Account retirement — Dues exempt — Effective 1/1/75.
  (d) Thomas C. Wilmoth, M.D. — Active to Active over 70 — Account age — Dues exempt — Effective 1/1/75.
(2) Pima County
  (a) Henry Brosin, M.D. — Active to Active over 70 — Account age — Dues exempt — Effective 1/1/75.
  (b) Frank L Presto, M.D. — Active to Associate — Account retirement — Dues exempt — Effective 1/1/75.
  (c) Simon Marcus, M.D. — Active to Active over 70 — Account age — Dues exempt — Effective 1/1/75.
  (d) Paul J. Matte, M.D. — Active to Affiliate — Account temporarily out of state — Dues exempt — Effective 1/1/75.
  (e) Clarence Robbins, M.D. — Active to Associate — Account retirement — Dues exempt — Effective 1/1/75.
  (f) Donald Schell, M.D. — Active to Associate — Account retirement — Dues exempt — Effective 1/1/75.
(3) Yavapai County
  (a) H. D. Heidinger, M.D. — Active to Associate — Account Residency — Dues exempt — Effective 1/1/75.

AD HOC INFORMATION BROCHURE COMMITTEE INFORMATION BROCHURE TO REPEAL PSRO

It was moved and carried to disapprove the printing and distribution of the proposed patient oriented brochure recommended by the ad hoc committee, while at the same time urging interested individual members of the Association to continue their public education activities regarding PSRO.

Medical Staff Poll

Discussion ensued on the advisability of asking each hospital medical staff to poll their members regarding their attitudes on some extra federal government peer review.

It was moved and carried to approve the concept of having each hospital medical staff poll its members using the following three-part questionnaire, **or one similar to it**, or some other mechanism to accomplish the same goal:

“POLICY ON RELATION OF THE MEDICAL STAFF TO GOVERNMENT AND THIRD PARTY CONTRACTS

1. Whereas, PSRO has been rejected by the majority of the medical profession because it will lower quality, increase costs and ration medical services, the proper and ethical alternative to PSRO is that medical staff physicians should **continue** ethical practice and peer review for quality control under the committees of the staff, including utilization review.

( ) I approve the above statement
( ) I do not approve the above statement

2. The practicing doctor and the medical staff are not parties to the hospital's contract with Medicare. The medical staff and its Utilization Review and other committees **will not accept or participate in PSRO functions:** Certification prior to admission and on admision, certification of lengths of stay by percentiles, and of treatment by government approved manuals, accountable to the Secretary of HEW for fiscal control.

( ) I approve the above statement
( ) I do not approve the above statement

3. Should the hospital administration contract require it to accept PSRO-type controls, the Hospital Board should request that the government itself provide the doctors to administer PSRO, or the board of the hospital **may employ non-staff doctors**, at government expense, to do this fiscal utilization review. The medical staff will hold the PSRO-doctors responsible for any denial of benefits and the rationing of medical services.

( ) I approve the above statement
( ) I do not approve the above statement”

Public Education Program

It was moved and carried to disapprove an Association-sponsored public education program on PSRO, while at the same time urging interested individual members of the Association to continue their public education activities regarding PSRO.

Improvements of Existing Programs

It was moved and carried that the Association support the improvement by the medical staffs of each hospital concerned with the quality of care by helping them implement more comprehensive measures for evaluation of quality care. It should be clearly understood each medical staff should set its own criteria for evaluation and such evaluation should remain at the hospital level since it is at this level most practicing physicians participate and have input into the medical system.

General Membership Poll

It was moved and carried to disapprove a general membership roll at this time, while at the same time urging individual members of the Association to continue their public education activities regarding PSRO.

EXECUTIVE SESSION — PERSONNEL

The President called for an Executive Session of the Board of Directors, excusing staff and all guests except Daniel T. Cloud, M.D.

FINANCE COMMITTEE

Financial Statement for Period Ending 10/31/74

Dr. Dexter reviewed the subject financial statement for the board – Received.

Request for Exemption

It was moved and carried to exempt Florine K. Hampton, M.D., from the Building Fund assessment due to financial hardship.

Building Fund Assessment Delinquents

It was reported that as of 11/22/74 the following members had not paid the 1974 portion of the building fund assessment. Received.

Otto A. Backus, M.D.
Carl Billings, M.D.
R. W. Choice, M.D.
Milton H. Coutu, M.D.
John C. Duffy, M.D.
Lowell M. Jones, M.D.
Alvin R. Leonard, M.D.
Clyde G. Miller, M.D.
Andrew W. Nichols, M.D.
Brendan P. Phibbs, M.D.
Jesse W. Tapp, Jr., M.D.
Anthony F. Vuturo, M.D.
J. Warner Webb, Jr., M.D.
Harold D. Wilkins, M.D.
Tadeusz Zakrzewski, M.D.

GRIEVANCE COMMITTEE

Positive Action

It was moved and carried that each case of continuing medical education delinquency be treated individually and that no positive action toward expulsion, etc., be taken prior to 12/31/74.

Individual Case Recommendations

It was moved and carried to approve the recommendations of the committee regarding continuing medical education delinquencies as follows:

1. One member be granted Associate Membership status when properly processed by the appropriate County Medical Society.
2. Fifteen members be granted a one-year extension, due to extenuating circumstances, in order to complete the CME requirement.
3. Fifteen be granted the certificate based on the fact that they had completed the requirement even though it was not reported in the prescribed fashion. In the cases where the $10 fee has not been paid, the member is to be billed for the fee.
4. One case is to be deferred for additional information and acted upon at a subsequent meeting.
5. Eleven be excused from the requirement to comply, due to extenuating circumstances, for the first three-year cycle, but asked to comply during the second three-year cycle.
6. Fifty members be given an extension of time to 12/31/74 in order to comply.

Public Information Program

It was moved and carried that the Public Relations Committee be asked to develop a public information program dealing with the positive aspects of the CME requirement program. Such program to be reviewed by legal counsel.

Fee

It was moved and carried that CME applications which are complete in all aspects except receipt of the $10 fee be approved. The certificate to be held up while the member is billed for the $10 fee.

Specialty Society Participation

It was moved and carried that names of those who have not completed the requirement be submitted to their specialty societies with a request that they encourage the members to complete the requirement.

HEALTH MANPOWER COMMITTEE

Physician's Assistants and Nurse Practitioners

It was moved and carried to approve, as a matter of policy, the experimental use of Physician's Assistants and Nurse Practitioners, under the personal supervision of physicians.

MEDEX

It was moved and carried that the Association co-sponsor a workshop by the University of Utah MEDEX Program, to be planned and executed by representatives of MEDEX and the Association's Health Manpower Committee. The purpose of the workshop is to explain the role of the Physician's Assistant and Nurse Practitioner in an organized multi-faceted health program. The proposed workshop to be held in the spring of 1975. There would be no financial obligation to ArMA.

Arizona Health Service Corps

It was moved and carried to approve the "objective" of the "Arizona Health Service Corps" plan, thereby making it possible for the Health Manpower Committee to proceed with developing grant applications, plans, etc., for subsequent review and approval by the Board of Directors prior to application and implementation.

> "Objective: The objective of the present proposal is, quite simply, to bring together Arizona rural health needs and resources in the most effective manner possible. It is proposed that this might be

done through the establishment of an Arizona Health Service Corps, to be modeled upon the National Health Service Corps, but to extend beyond the objectives of the latter program. Specifically, the AHSC would provide a vehicle through which retired physicians, physician extenders, recent medical graduates, Indian health or migrant health physicians and private practicing physicians may be brought together in the service of Arizona's rural areas, to include Indian reservations, agricultural regions populated primarily by seasonal farm laborers and sparsely inhabited state or federal lands with their seasonal influx of both out-of-state and Arizona tourists."

MATERNAL & CHILD HEALTH CARE COMMITTEE

Arizona State Community Coordinated Child Care Planning Committee

It was moved and carried to endorse in principle the Arizona State community coordinated Child Care Planning Committee proposal, provided that physicians of varying specialties might have more opportunity for input in the planning committee than is presently indicated.

Maternal Mortality Study

It was moved and carried to provide a budget item of $1,625.00 to the Maternal and Child Health Care Committee for the continuation of the Maternal Mortality Study through 1975 as follows:

1. Case gathering. This would probably be done by an obstetrical nurse or midwife. It would consist of going through, on a quarterly basis, all death certificates on women aged 15-50.
   Estimated Cost $200.00
2. Rental of post office box to use for correspondence with the physician's questionnaires 50.00
3. Printing 50.00
4. Postage 25.00
5. Stipend plus mileage for physician investigator. It is anticipated that obstetrical-gynecologic residents in the state programs would be used for this.
   Estimated Cost $1,000.00
6. Expenses associated with quarterly to semiannual meetings of the committee. $ 200.00
7. Provision for exhibits and teaching mechanisms for the annual meeting. 500.00
   Sub-Total $2,025.00
   LESS: Arizona Chapter, American College of Obstetrics and Gynecology portion. 400,00.
   Total $1,625.00

Early Periodic Screening, Diagnosis and Treatment

It was moved and carried to refer this matter back to the Maternal and Child Health Care Committee for reconsideration by the section on services for children with the following recommendations:

A. To reconsider the entire approach to EPSDT with official input from the Arizona Academy of Family Physicians, Arizona Society of Internal Medicine, and the Arizona Society of Pediatrics.

B. That the resulting policy statement should include suggesting that various options be available, including the existing health care delivery system.

C. That the numbers, training, and qualifications of the "health counselor," "P.N.A.," and other personnel should be under the **direct supervision** of a physician.

D. That every effort should be made to involve the primary physician at the first level of access.

MEDICAL ECONOMICS COMMITTEE

Arbitration

It was moved and carried to encourage and support efforts of interested County Medical Societies and appropriate hospital groups to establish arbitration mechanisms as embodied in the Monterey project. That the Association continue its statewide education program on malpractice in conjunction with The Travelers Insurance Companies.

Uniform Health Insurance Claim Form

Considerable discussion ensued on the committee's recommendation to provide 100 of the two-part form free to each member. It was pointed out that the subject will be before the AMA House of Delegates at their meeting in Portland.

It was moved and carried to table this matter.

MEDICAL EDUCATION COMMITTEE

CME Fee

The committee recommended that the $10.00 CME fee be eliminated and included as part of the dues.

It was moved and carried to refer this matter to the Finance Committee for inclusion in the 1976 budget.

Associate Dean for CME

It was moved and carried to instruct the President to contact the Dean of the College of Medicine to urge him to give further consideration to Robert E. Hastings, Jr., M.D., as a candidate for the subject position.

OCCUPATIONAL HEALTH COMMITTEE

Mr. Robinson reported on the negotiations held with ICA on November 7, 1974. The following is a copy of the presentation made:

"RELATIVE VALUE STUDIES:

As we indicated last year, we have investigated the desirability of adopting the 1969 California Relative Value Study as the basis for the Medical Fee Schedule required by law to be established by the Industrial Commission of Arizona. After extensive study we have three recommendations which we would ask the Commission to adopt:

1. That the Commission adopt the 1969 California Relative Value Study for the purpose of identifying procedures in the fields of Medicine, Surgery and Laboratory.
2. That the Commission adopt the 1973 American College of Radiology Relative Values Study for the purposes of identifying procedures in the field of Radiology.
3. That the Commission continue to use the 1973 American Society of Anesthesiologists Relative Value Guide, but with modifiers for emergency cases, for the purpose of identifying procedures in the field of Anesthesia.

FEES:

The Commission is aware that this Association did not request an increase in fees at the time of our discussions last year, hoping that the economy would stabilize. That has not happened, in fact the reverse is true.

The Consumer Price Index was 128.6 when I.C.A. fees were last changed, on February 1, 1973. The Consumer Price Index on December 30, 1974 was 151.9, an increase of 23.3 points or an 18.1% increase between 2/1/73 and 9/30/74. Projected through 2/1/75, using a six-month average monthly increase of 1.3 points, (1.3 is conservative as the increase in August was 2.0 points and in September 1.7 points) the Consumer Price Index will have increased 29.8 points or 23.2% since the last increase in the I.C.A. schedule on 2/1/73.

Countless examples of rising costs could be enumerated supporting what we all know about the astronomical increase in the cost of doing business — I shall not do so here.

RECOMMENDATIONS:

We recommend the following conversion factors as being fair and reasonable. You will find that taken as a whole they average 14.9% higher than the I.C.A. fees set on 2/1/73.

Medicine, Surgery and Laboratory

Category	**Using '69 CRVS**
Medicine	$ .83
Surgery	$38.00
Laboratory	$ .27

For comparison's sake we are listing the equivalents using the '64 CRVS.

Category	**Using '64 CRVS**
Medicine	$10.00
Surgery	$ 8.50
Laboratory	$ 6.50

Radiology

Category	**Using '73 Radiology Study**
Radiology — Total Service	$ 7.50
Radiology — Professional Component Only	$ 1.70

Anesthesia

Category	**Using '73 ASA Guide**
Anesthesia — Regular Service plus Emergency Modifying Units	$10.00

The Commission's adoption of the above recommendations will be sincerely appreciated by the medical profession, and will bring I.C.A. fees more closely in line with fees customarily paid for these services in Arizona at this time.

UNIFORM CLAIM FORM

As a result of the expansion of government programs coupled with the extensive growth of the health insurance industry and the continuous broadening of policy provisions to cover more and more ambulatory services, the physician has found his office saturated with various types of insurance report forms. Many of these report forms are complicated and time consuming to complete.

The American Medical Association's Council on Medical Service and its Committee on Health Care Financing recognized the need to simplify and standardize reporting of physician services for reimbursement under the various types of government programs and third party policies. To fulfill this need, a Work Group was established to develop a uniform physician reporting form acceptable to the various governmental agencies and health insurance organizations. This Work Group represented an expansion of activities which have been successfully carried on by the AMA and the Health Insurance Council for many years. Specifically, the objectives of the Work Group were to develop a computer adaptable uniform reporting form designed to: (1) satisfy the needs of most health insurance organizations and agencies; (2) reduce the total costs of claims processing; (3) simplify physician reporting and third party processing without impairing system efficiencies and controls; and (4) provide a uniform reporting format compatible with PSRO data accumulation requirements.

The Work Group, consisting of members representing the American Medical Association, Bureau of Health Insurance-DHEW, California Medical Association, Health Insurance Council, Medical Group Management Association, Medical Services Administration-DHEW, National Association of Blue Shield Plans, Office of Secretary of Defense, Health and Environment (CHAMPUS), the Society of Professional Business Consultants, with input from various other professional organizations, has worked diligently to accomplish its stated objectives. These objectives have been met as evidenced by the development of the Health Insurance Claim Form.

The Arizona Medical Association would sincerely appreciate it if the I.C.A. would review this form for its adaptability to workmen's compensation cases, and should it be functional for that purpose, request that all carriers accept the form in place of present I.C.A. forms."

Mr. Robinson reported that it was his understanding that the ICA had rejected the idea of using the 1969 CRVS, that they would investigate the use of a standard claim form, and that they probably would accept the recommended fee schedules. Received.

AMA DELEGATES REPORT

Daniel T. Cloud, M.D., and Edwin Smith reviewed the various proposals that will be before the AMA House of Delegates at their Portland meeting, including the following:

+ Recommend to the House of Delegates a balanced budget of $35,311,029 for fiscal 1975 (beginning December 1, 1974).
+ Eliminate two councils and 17 committees of the Board and recommend elimination of 11 committees appointed by the House. Many of those eliminated were short-term ad hoc committees. The AMA will still have 11 councils and 35 committees.
+ Recommend to the House, which meets in Portland, Ore., December 1-4, that advertising in AMA publications be discontinued. Gross sales of advertising (most of it for pharmaceutical products) amounts to approximately $9 million a year.
+ Undertake administrative adjustments to reduce the AMA staff from 997 on last August 2 to approximately 950 next year.

- + Request House approval for an increase in annual dues for regular members from $110 to $200, effective January 1, 1975. Dues for intern and resident members would rise from $20 to $35 and for medical students from $15 to $25. The last AMA dues increase in 1971 raised regular membership dues from $70 to $110.
- + Reduce the number of issues of the **Journal of the AMA** from 52 to 48 annually; change three of the 10 specialty journals of the AMA (**Pathology, Neurology, Environmental Health**) from monthlies to quarterlies; charge members for each specialty journal they wish to receive; discontinue publication of several newsletters; reduce the number of issues of **Prism** from 12 to 10 issues annually.

It was moved and carried not to instruct our delegates to the AMA on how to vote on these various issues.

OTHER BUSINESS

Meeting Dates

It was moved and carried that all regular meetings of the Board of Directors, except during the annual meeting, will be held on Saturdays to start at 10:00 a.m.

It was moved and carried to poll the members of the Board as to whether the Board of Directors meetings should be on Saturday at 10:00 a.m. or on Sunday at 10:00 a.m.

BOMEX

Mr. Robinson reminded the Board that during the February meeting they will be asked to submit names for the replacement of Walter Eicher, M.D., on the Board of Medical Examiners. Such person must have practiced in Arizona for five years and must reside in Maricopa County. Received.

MEDIX TV Program

It was moved and carried to endorse the MEDIX Public Health TV series as requested by the Burroughs-Wellcome Company. No cost will be incurred by the Association.

Blue Shield Board of Directors

Dr. Scott reminded the Board that as chairman of the Blue Shield nominating committee he would be most interested in receiving recommendations for openings on this board.

Acupuncture

A request from the Arizona Osteopathic Medical Association to support and co-sponsor legislation dealing with acupuncture was reviewed.

It was moved and carried to be supportive of the efforts of the Arizona Osteopathic Medical Association in obtaining legislation to control acupuncture and to refer this matter to our Legislative Committee for action.

Meeting adjourned 5:18 p.m.

William E. Crisp, M.D.
Secretary

SCIENTIFIC ASSEMBLY COMMITTEE

The meeting of the Scientific Assembly Committee of the Arizona Medical Association, Inc. held Saturday, December 7, 1974 in the Aztec Room at the Braniff Place Hotel in Tucson convened at 1:41 p.m., Donald J. Ziehm, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting held September 28, 1974 were approved as distributed.

SCIENTIFIC EXHIBITS

COSTS

Mr. Robinson pointed out that unlike previous years, the hotel is charging for the exhibit space at the rate of $10 per day per booth.

SELECTION

It was moved and carried to accept the following exhibits and provide one space for each.

1. "Diagnostic Ultrasound in the Evaluation of Intra-Abdominal and Extra-Peritoneal Mass Lesions."
   – Avi Ben-Ora, M.D.; Theodore Mobley, M.D.
2. "American Association of Medical Assistants, Arizona Society."
   – Same.
3. "Comprehensive Outpatient Respiratory Care in Suburban Private Practice."
   – Fred A. Obley, M.D.; Franklin M. Preiser, M.D.
4. "Scoliosis."
   – Richard L. Morgan, M.D.; Richard J. Haynes, M.D.
5. "Transplant Kidneys – Don't Bury Them."
   – Arizona Kidney Foundation.
6. "Epidemiology – A Cooperative Effort."
   – Arizona Department of Health Services.
7. "Nuclear Cardiology"
   – Jerome C. Robinson, M.D.; Lawrence Ganter, M.D.; Martin R. Daily, R.N.T.
8. "Analysis of 250 Polycentric Knee Replacements with Greater Than One Year Follow-Up"
   – Joseph Dupont, M.D.; Richard Truluck, M.D.
9. "School Screening for Detection of Spinal Deformities in Children"
   – Paul E. Palmer, M.D.
10. "Hope for a Better Tomorrow"
    – S. A. Gregg, M.D.
11. "Electrodiagnosis of Nerve Entrapment Syndromes"
    – Stuart I. Holtzman, M.D.; John P. Utz, M.D.

THE FOLLOWING TO BE PROVIDED TWO SPACES

12. "Colposcopy"
    – J. F. Wurzel, M.D.; William C. Scott, M.D.; Edward Sattenspiel, M.D.; William Russell, Jr., M.D.
13. "Recent Advances in Ultrasonic Applications of Obstetrics and Gynecology"
    – David B. Rosenberg, ASUTS; C. D. Christian, M.D.; Harlan R. Giles, M.D.; William C. Scott, M.D.

SCIENTIFIC PAPERS

It was moved and carried to accept the following scientific papers:

1. "Omental Transposition for Lymphedema"
   – Gabriel F. De Freitas, M.D.; Herbert Munhall, M.D.
2. "Traumatic Renal Artery Thrombosis with Kidney Survival"
   – F. Darwin Zahn, M.D.
3. "Cardiac Arrest Study at Walter O. Boswell Memorial Hospital in Sun City, Arizona"
   – Walter W. Sittler, M.D.; George Lastnick, M.D.
4. "Surgical Considerations in Treatment of Transsexuals"
   – Paul L. Schnur, M.D.; B. R. Burkhardt, M.D.

5. “Fever and Leukocytosis Following Intravenous Heroin”
   – Brendan D. Thomson, M.D.
6. “Endoscopy in Obstetrics and Gynecology – The Current Status of Laparoscopy, Hysteroscopy and Fetoscopy”
   – David Pent, M.D.; Franklin D. Loffer, M.D.
7. “Nuclear Medicine for the General Physician”
   – Robert E. O’Mara, M.D.
8. “Utilization of Scoliosis Principles in the Treatment of Dorsal and Lumbar Fractures”
   – Richard J. Haynes, M.D.; Richard L. Morgan, M.D.; William C. Brainard, M.D.
9. “Blood Availability for Rural Areas – Autotransfusion”
   – Kenneth L. Mattox, M.D.; Louis E. Walker, M.D.
10. “Mecholyl Inhalation Test for Asthma in the Office Practice”
    – Suresh C. Anand, M.D.
11. “The Development and Clinical Implementation of a Total Wrist Joint”
    – Robert G. Volz, M.D.; David S. Mayer, M.D.
12. “Clinical Experience with the L/S Ratio in High Risk Pregnancies”
    – David G. Mong, M.D.
13. “Tendon Injuries in the Hand: Pitfalls in Diagnosis and Treatment”
    – Lawrence M. Haas, M.D.; Melvin D. Roberts, M.D.
14. “Early Ambulation of Patients with Hip Fractures Treated by the Compression Hip Screw”
    – Melvin D. Roberts, M.D.; Lawrence M. Haas, M.D.
15. “The Control of Wound Contraction: An Experimental Model”
    – Phillip A. Stone, M.D. and John W. Madden, M.D.
16. “Neonatal Mepivicaine Toxicity Following Paracervical Block Anesthesia”
    – Stephen W. Hales, M.D.
17. “The Attainment of a Zero Hospital Mortality Rate in Permanent Cardiac Pacemaker Surgery”
    – Earl J. Baker, M.D.; Hugh B. Hull, M.D.; Jerome Robinson, M.D.; E. Lawrence Ganter, M.D.; James Hopkins, M.D.
18. “A Panel Discussion of Medical Ethics: 1) Primary Patient Responsibility – Where Does It Begin and End? 2) Medicine; a Business, a Profession?”
    – Joseph W. Hanss, M.D.
19. “Presumptive Viral Diagnosis: A Developing Clinical Tool in the Management of Infectious Diseases”
    – O. F. Sieber, Jr., M.D.; R. Riggin, M.D.; D. Ryckman, M.D.; V. A. Fulginiti, M.D.
20. “Tropical Diseases in Arizona”
    – T. Jacob John, M.D.; Otto F. Sieber, Jr., M.D.; William E. Lartner, M.D.; Vincent A. Fulginiti, M.D.
21. “The Importance of Testing for Atypical Mycobacteria in Arizona Children with Tuberculin Skin Test Conversion”
    – William E. Larter, M.D.; Otto F. Sieber, Jr., M.D.; T. Jacob John, M.D.; Audrey Opulski, M.D.
22. “Low Friction Arthroplasty – Analysis of 700 Cases”
    – Joseph A. Dupont, M.D.; Richard K. Truluck, M.D.
23. “The Use of Valium and Nisentil for Outpatient Therapeutic Abortions”
    – Robert H. Tamis, M.D.; Robert L. Wechsler, M.D.
24. “Experience in the Use of Acupuncture”
    – John P. Utz, M.D.
25. “Systemic Manifestations of Bronchogenic Carcinoma”
    – John P. Utz, M.D.
26. “A Reevaluation of the Care of the Rape Victim”
    – Joseph W. Hanss, M.D.; Samuel DeFrancisco, M.D.; Frederick Stimmell, M.D.
27. “Abdominal Trauma: When to Go In; When to Stay Out”
    – Douglas H. Lindsay, M.D.; Martin E. Silverstein, M.D.
28. “Use of Realtime Ultrasound Scanner in Obstetrics”
    – Marilyn K. Laughead, M.D.; Raymond J. Jennett, M.D.; Shane Abowitt, M.D.
29. “Broncho-Pulmonary Sequestration in Children”
    – George A. Streza, (M.D.; David S. Trump, M.D.
30. “The Role of Endarterectomy with Vein Bypass in Direct Coronary Arterial Surgery”
    – Bicher Barmada, M.D.; Edward B. Diethrich, M.D., Sam A. Kinard, M.D.
31. “Homograft Veins for Arterial Reconstruction”
    – Ravindranath Koopot, M.D.; Edward B. Diethrich, M.D.; Sam A. Kinard, M.D.
32. “Intraoperative Ultrasound Evaluation of the Mitral Valve”
    – Vincent E. Friedewald, M.D.; Edward B. Diethrich, M.D.; Joel E. Futral, M.D.

NORTHWESTERN SCHEDULE

Mr. Robinson reported that the faculty schedule from Northwestern has finally been finalized.

BREAKFAST PANELS

Mr. Robinson reported that the Thursday and Friday morning breakfast panels have been finalized.

WOMEN’S AUXILIARY

It was moved and carried to allot booths Numbers 1, 2, 3, 4, 15, 16 and 17 to the Woman’s Auxiliary.

Meeting adjourned 3:12 p.m.

William E. Crisp, M.D.
Secretary
Bruce E. Robinson
Executive Director

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

The meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, December 14, 1974, convened at 2:46 p.m., Charles E. Henderson, M.D., Chairman presiding.

The minutes of the meeting held December 15, 1973 were approved as distributed.

MINUTES

Note: All bracketed, italicized words represent deletions; all fully capitalized words are new material.

PHYSICIAN REHABILITATION COMMITTEE

It was moved and carried to recommend the following resolution to the Board of Directors for approval and submission to the House of Delegates.

RESOLVED, That Chapter VII, Section 4 be amended by adding:

(M) PHYSICIAN REHABILITATION: – THIS COMMITTEE SHALL CONSIST OF THE CHAIRMAN AND AT LEAST SEVEN MEMBERS WITH DUE CONSIDERATION TO GEOGRAPHIC DISTRIBUTION AND SPECIALTY REPRESENTATION.

THE COMMITTEE SHALL BE FOR THE PURPOSE OF ASSISTING PHYSICIANS WHO HAVE PHYSICAL OR EMOTIONAL PROBLEMS WHICH MAY BE AFFECTING OR IMPAIRING THEIR PROFICIENCY IN THE PRACTICE AND THE QUALITY OF THEIR MEDICAL OR SURGICAL ACTIVITIES. THE COMMITTEE SHALL DEAL WITH EACH CASE AND FOLLOW UP AS APPROPRIATE.

MEDICAL ECONOMICS AND OCCUPATIONAL HEALTH COMMITTEES

It was moved and carried to recommend the following resolution to the Board of Directors for approval and submission to the House of Delegates.

RESOLVED, That Chapter VII, Section 4 be amended to read:

(j) Medical Economics:—This committee shall consist of a Chairman and at least six members appointed on a geographic basis and with due consideration of the specialties and general practice. This committee shall deal with matters affecting the economic status of doctors of medicine. Sections will be set up within the committee and these may be enlarged as necessary. The purview of this committee shall include:

(1) Governmental Contracts; *(: except those matters dealing with workmen's compensation;)*
(2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;
(3) Organized Welfare and Charity Work;
(4) Retirement and Investments, including Group Investments for members.

(1) Occupational Health – This committee shall consist of a Chairman and at least five members appointed on a geographic basis and with due consideration for the specialties and family practice. *(The committee shall represent the association on all questions relating to medical relations under workmen's compensation)*

It shall also concern itself with improvement in industrial safety and the maintenance of good industrial health (rehabilitation) practices.

SOLICITATION

It was moved and carried to recommend the following resolution to the Board of Directors for approval and submission to the House of Delegates.

RESOLVED, That Chapter V, Section 6 be amended by deletion:

(Section 6. Solicitation – Any person known to have sought for himself any office within the gift of this Association, shall be ineligible for any office for two years from the date of the offense)

HOUSESTAFF SECTION

It was moved and carried to recommend the following resolution to the Board of Directors for approval and submission to the House of Delegates.

RESOLVED, That Chapter II, Section 3(A) be amended to read:

(A) Active Members

All active members of all the county societies shall be active members of this Association. The minimum qualifications for active membership (other than for interns and residents) in a county society shall be that the individual must (1) hold the degree of doctor of medicine or its equivalent or doctor of osteopathy, (2) be an American citizen, or have made application for American citizenship papers (in which case, he must make reasonable progress toward full citizenship or his membership shall lapse), (A) hold an unrevoked license to practice medicine and surgery or osteopathic medicine and surgery in the State of Arizona, (4) be a legal resident of the State of Arizona, (5) fulfill the continuing medical education requirements of the Arizona Medical Association. Subject to these minimum qualifications and to the provisions for loss of membership (Chapter I, Section 4), each county society shall be the exclusive judge of the qualifications of its members.

Interns and residents who are licensed or registered with the Board of Medical Examiners, State of Arizona, are eligible for active membership in a county society. THESE MEMBERS SHALL CONSTITUTE THE MEMBERSHIP OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION.

Rights. An active member shall have all the rights and privileges of the Association as herein provided. Intern and resident active members shall pay ten percent of the dues of other active members and will be exempted from special assessments.

RESOLVED, That Chapter VIII, Sections 1, 2 and 3 be amended to read:

Section 1. Composition of House: Meetings – The House shall constitute the voting body of the Association and shall be composed of the elected Delegates of the county societies, elected Delegates of each duly constituted chapter of the Student American Medical Association in Arizona, ELECTED DELEGATES OF THE DULY CONSTITUTED CHAPTER OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and the members of the Board. Delegates who are thereafter elected as officers do not by such election lose their status as voting Delegates in the House. The past presidents of the Association shall be ex-officio members of the House of Delegates without the right to vote.

The House shall meet at least once a year at the time of the Annual Meeting. In addition, special meetings of the House may be held at any time, upon at least six weeks notice thereof to the Delegates, at the call of the Board, or upon the call of twenty Delegates representing at least eight county societies.

Section 2. Number of Delegates: — Each county society shall be entitled to representation in the House by two Delegates, or their alternates, for the first twenty active members or fraction thereof, and one additional Delegate for each additional twenty active members or major fraction thereof, as determined on October first preceding the Annual Meeting.

Each duly constituted chapter of the ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION AND EACH DULY CONSTITUTED CHAPTER OF THE Student American Medical Association in Arizona shall EACH be entitled to representation in the House by two Delegates or their alternates.

Section 3. Election of Delegates; List Thereof:— Sufficiently in advance of the Annual Meeting each county society, THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and each duly constituted chapter of the Student American Medical Association in Arizona shall elect Delegates and an equal number of alternates to represent it in the House. In the absence of any Delegate, his alternate may vote in his name on any question before the House. No alternate shall be eligible for election to office, but he may be appointed to membership on House committees in the absence of the Delegate. The secretary of each county society and OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION and each chapter of the Student American Medical Association shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting. Representation in the House shall be contingent upon compliance with this provision. A member to be seated must present evidence at the time of his appearance at the House, of his official election by his county society OR THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, or chapter of the Student American Medical Association.

BOARD OF DIRECTORS — AMA BOARD OF TRUSTEES

It was moved and carried to recommend the following resolution to the Board of Directors for approval and submission to the House of Delegates.

RESOLVED, That Chapter VI, Section 1 be amended to read:

> Section 1. Members: —The Board shall be composed of the officers of the Association, AND ANY MEMBER OF THE ARIZONA MEDICAL ASSOCIATION WHO IS AN OFFICER OR TRUSTEE OF THE AMERICAN MEDICAL ASSOCIATION.

Meeting adjourned 3:45 p.m.

William E. Crisp, M.D.
Secretary
Bruce E. Robinson
Executive Director

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

GOOD SAMARITAN HOSPITAL, PHOENIX
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

REVIEW COURSE IN INTERNAL MEDICINE

Weekly on Wednesdays, 5 p.m.-6:30 p.m.
at participating Hospitals listed below
February 5 - June 4, 1975

SPONSOR: Departments of Medicine, Good Samaritan Hospital, Maricopa County General Hospital and St. Joseph's Hospital

CONTACT: D. J. Crosby, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

PRESCOTT VETERANS ADMINISTRATION CENTER CONTINUING MEDICAL EDUCATION PROGRAM

1:30 p.m. Bldg. 28, V.A. Center, Prescott, AZ.

February 6 — Neurological Problems
February 13 — Peptic Ulcer Disease
February 20 — Lecture on mid-systolic clicks with demonstration by Phonocardiography (Conf. Rm. Ward 3B)

SPONSOR: Veterans Administration

CONTACT: Charles A. Trahern, M.D.
Coordinator, Continuing Medical Education
Veterans Administration Center
Prescott, AZ 86301

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

EIGHTH ANNUAL SOUTHWESTERN CLINICAL PHARMACY SEMINAR

February 14-16, 1975
Braniff Place Hotel, Tucson, AZ

SPONSOR: College of Pharmacy, U of A

CONTACT: William D. Hardigan, Ph.D., Dir.
Pharmacy Extension
U of A
Tucson, AZ 85721

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

NUTRITIONAL FOCUS — 1975 PERINATOLOGY AND GERONTOLOGY

February 28, 1975
8:30 a.m., U of A College of Medicine
Tucson, AZ

SPONSOR: University of Arizona College of Medicine, Dept. of Pediatrics

CONTACT: Otto F. Sieber, Jr., M.D.
Department of Pediatrics
University of Arizona
College of Medicine
Tucson, AZ 85724

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

ARIZONA STATE SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING

March 1, 1975
Scottsdale Hilton, Scottsdale, AZ

SPONSOR: Arizona State Society of Anesthesiologists

CONTACT: Eldon S. Reed, M.D.
3625 N. 16th St.
Phoenix, AZ

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

SYMPOSIUM ON INFECTION CONTROL

March 20 & 21, 1975
Ramada Inn, Phoenix, AZ

SPONSOR: Assoc. for Infection Control, Arizona Dept. of Health Services, and Center for Disease Control at Atlanta, Ga.

CONTACT:
Sonia J. Burns, R.N.
3923 S. Willow Drive
Tempe, AZ 85282

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

A DAY IN GERIATRIC THERAPEUTICS

March 22, 1975
Lakes Club, Sun City, AZ

SPONSOR: Western Div. of American Geriatrics Society & Boswell Memorial Hospital, Sun City, AZ.

CONTACT: Julius Schwimmer, M.D., F.A.C.C.
13000 N. 103 Ave.
Sun City, AZ 85351

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

SCOTTSDALE MEMORIAL HOSPITAL SEMINAR #9 ADVANCES IN INTERNAL MEDICINE

March 22, 1975
Homestead Room
Paradise Valley Country Club
Paradise Valley, AZ

SPONSOR: Medical Staff, Scottsdale Memorial Hospital

Participants: James L. A. Roth, M.D.
Univ. of Pennsylvania School of Medicine
John Ward, M.D., Univ. of Utah Medical Center
Robert S. Eliot, M.D., Univ. of Nebraska Medical Center
William M. Kirby, M.D., Univ. of Washington School of Medicine

CONTACT: Roger C. Good, M.D., Director of Medical Education
7300 E. 4th Street
Scottsdale, AZ 85251

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

ARTHRITIS SERVICES PROGRAM

April 5, 1975, 9 a.m.-4 p.m.
Arizona Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program, U of A College of Medicine

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

ARIZONA MEDICAL ASSOCIATION
84TH ANNUAL MEETING

April 22-26, 1975
Braniff Place Hotel and Tucson Community Center
Tucson, AZ

SPONSOR: Arizona Medical Association and
Northwestern University

CONTACT:
Donald J. Ziehm, M.D.
Program Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 14½ required hours toward the ArMA Certificate in Continuing Medical Education.

VECTORCARDIOGRAPHY — A BASIC WORKSHOP

April 30-May 2, 1975
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: American College of Cardiology,
Institute for Cardiovascular
Diseases, Good Samaritan Hospital

CONTACT:
Alberto Benchimol, M.D.
Institute for Cardiovascular Diseases
1033 E. McDowell Rd.
Phoenix, AZ

RECENT CLINICAL ADVANCES IN DIABETES MELLITUS

May 10, 1975
U of A College of Medicine, Tucson, AZ

SPONSOR: Tucson Chapter, American
Diabetes Association

CONTACT: Alfred E. Stillman, M.D.
2122 North Craycroft Road
Tucson, AZ 85712

Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

TENTH ANNUAL MEETING
ROCKY MOUNTAIN NEUROSURGICAL SOCIETY

June 8-11, 1975
Cozumel Island, Yucatan Peninsula, Mexico

June 12-13, 1975
Post Convention Seminars, Pan-American Hotel
Merida, Yucatan Peninsula, Mexico

SPONSOR: Rocky Mountain Neurosurgical Society

CONTACT: Richard H. Moiel, M.D., Secretary
Rocky Mountain Neurosurgical Society
601 Medical Towers, 1709 Dryden St.
Houston, Texas 77025

PHYSICIANS TRAINING PROGRAM AS PART OF ARTHRITIS SERVICES PROGRAM

July 1, 1974 - June 30, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: Arizona Medical Center and
Arthritis Services Program

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS MEDICAL & SURGICAL

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Departments of Medicine, Family Practice,
and Surgery

CONTACT: Jack D. Nestor, M.D.
Clinical Laboratory
1601 W. St. Mary's Rd.
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

PHOENIX PSYCHIATRIC COUNCIL
CONTINUING EDUCATION PROGRAM

September 1974 — May 1975

SPONSOR: Phoenix Psychiatric Council

CONTACT:
Robert H. Barnes, M.D.
525 N. 18th St.
Phoenix, AZ 85006

Approved for required hours per session toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

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MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

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Dir. Medical Education
7300 E. 4th St.
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CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
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3rd Wednesday Every Month
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CONTACT:
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Weekly — Friday 8-9 a.m.
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Tucson, AZ

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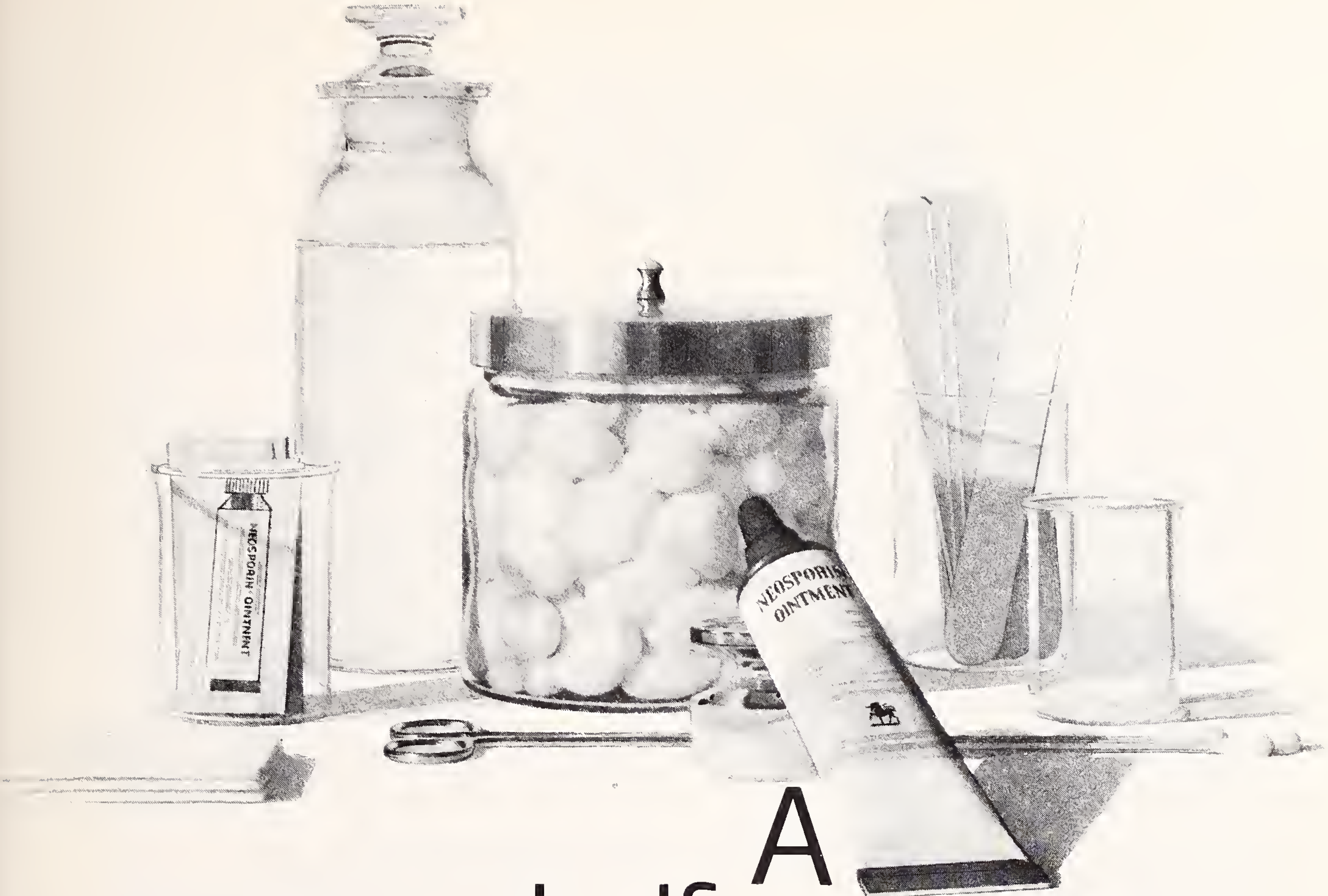

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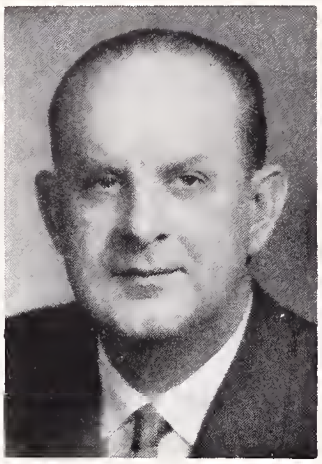

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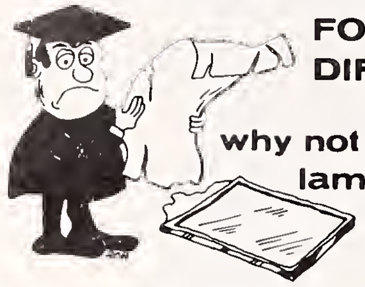

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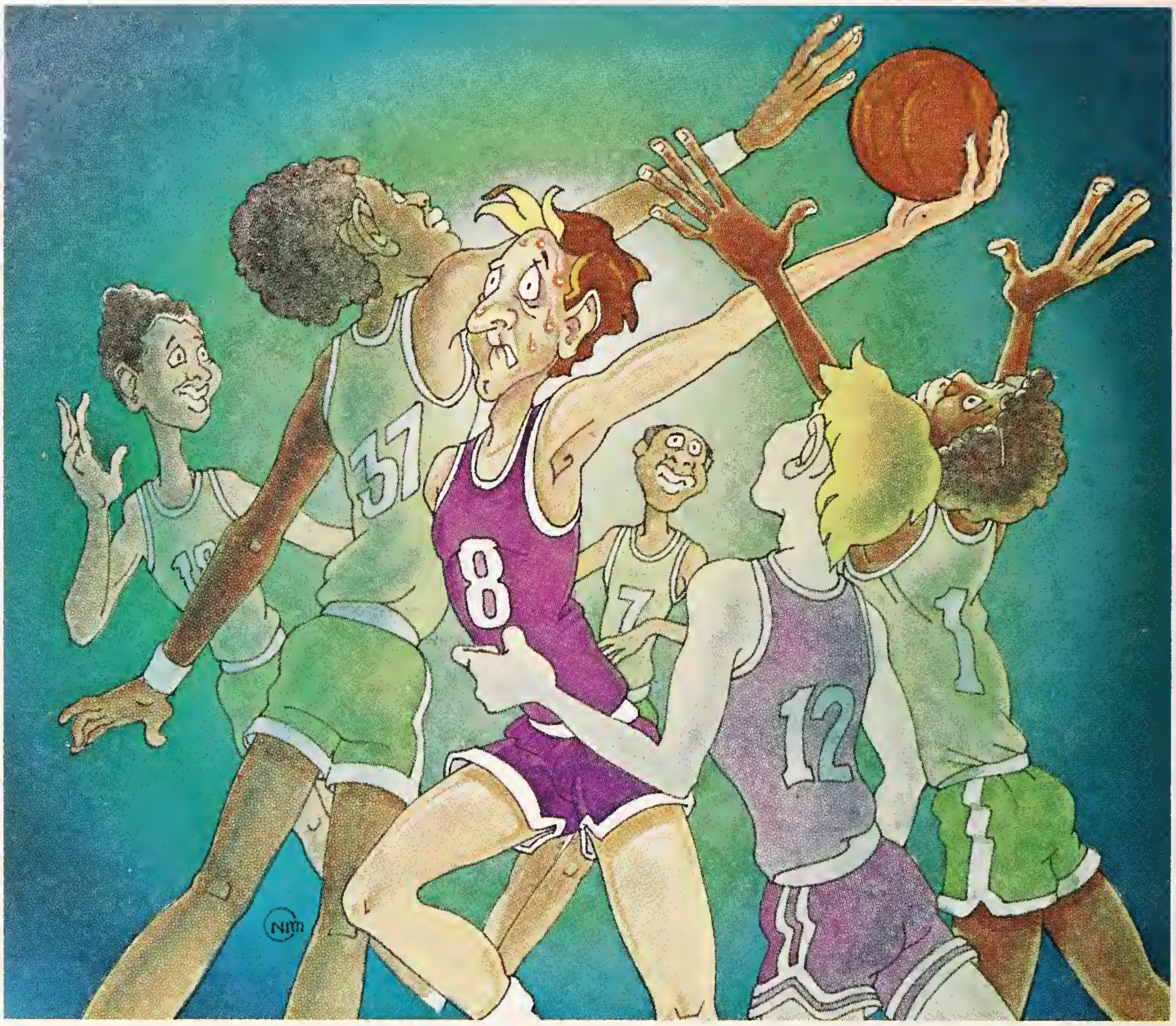

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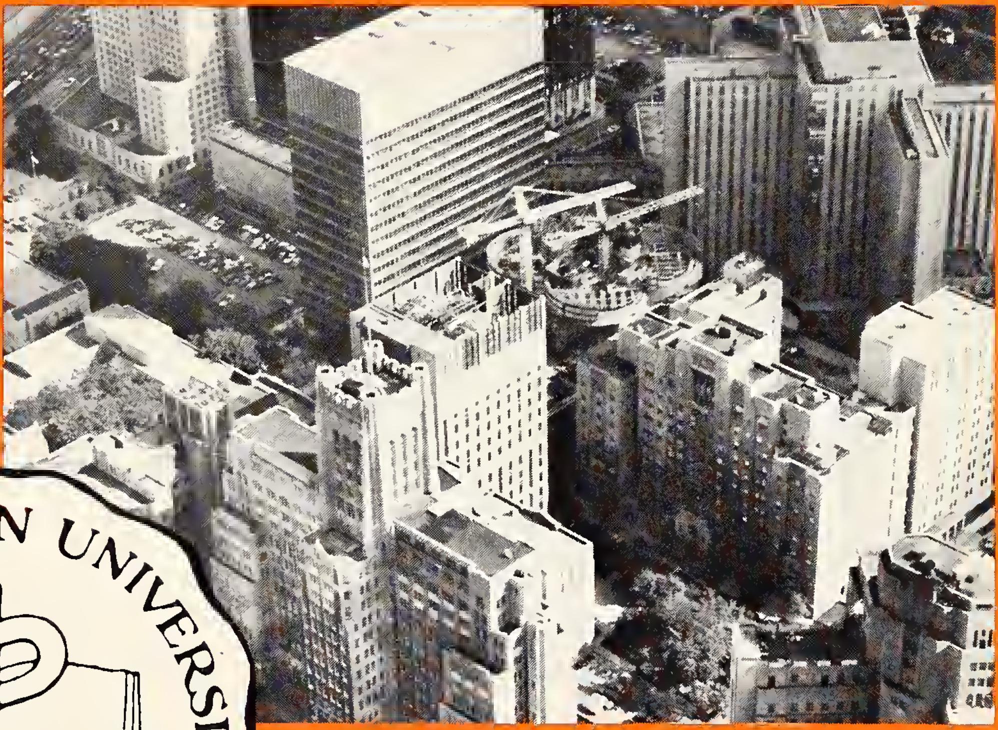

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Associated depressive symptoms

Before prescribing, please consult complete product information, a summary of which follows:

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Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

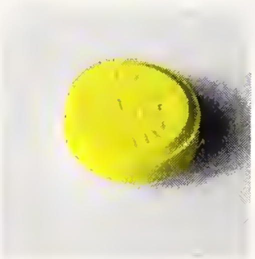
Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful

respond to one

According to her major symptoms, she is a psychoneurotic patient with severe anxiety. But according to the description she gives of her feelings, part of the problem may sound like depression. This is because her problem, although primarily one of excessive anxiety, is often accompanied by depressive symptomatology. Valium (diazepam) can provide relief for both—as the excessive anxiety is relieved, the depressive symptoms associated with it are also often relieved.

There are other advantages in using Valium for the management of psychoneurotic anxiety with secondary depressive symptoms: the psychotherapeutic effect of Valium is pronounced and rapid. This means that improvement is usually apparent in the patient within a few days rather than in a week or two, although it may take longer in some patients. In addition, Valium (diazepam) is generally well tolerated; as with most CNS-acting agents, caution patients against hazardous occupations requiring complete mental alertness.

Also, because the psychoneurotic patient's symptoms are often intensified at bedtime, Valium can offer an additional benefit. An *h.s.* dose added to the *b.i.d.* or *t.i.d.* treatment regimen can relieve the excessive anxiety and associated depressive symptoms and thus encourage a more restful night's sleep.



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in psychoneurotic
anxiety states
with associated
depressive symptoms

surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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ARIZONA MEDICINE

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We welcome Northwestern Univ. College of Medicine as the guests faculty for our 84th Annual Meeting, Page 201 for details.

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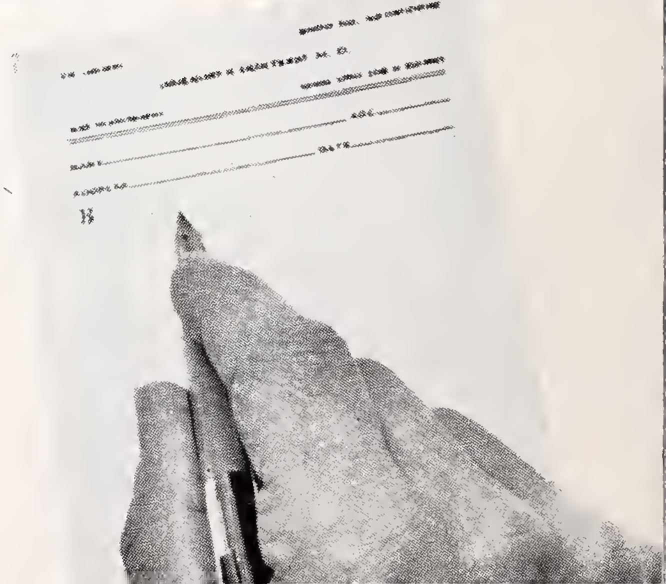
Bioequivalence



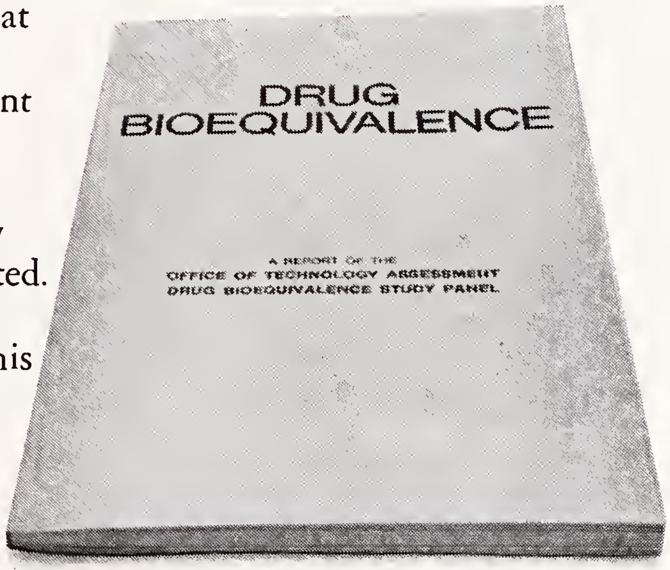
the weight of scientific opinion:

If the pharmacist substituted a chemically equivalent drug for the one you have specified for your patient—could you be certain of that product's safety and effectiveness simply because the chemical content was the same?

Definitely not, unless bioequivalence tests and other quality assurance checks had been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.


DRUG
BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:

(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of your prescription...

Pharmaceutical Manufacturers
Association
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*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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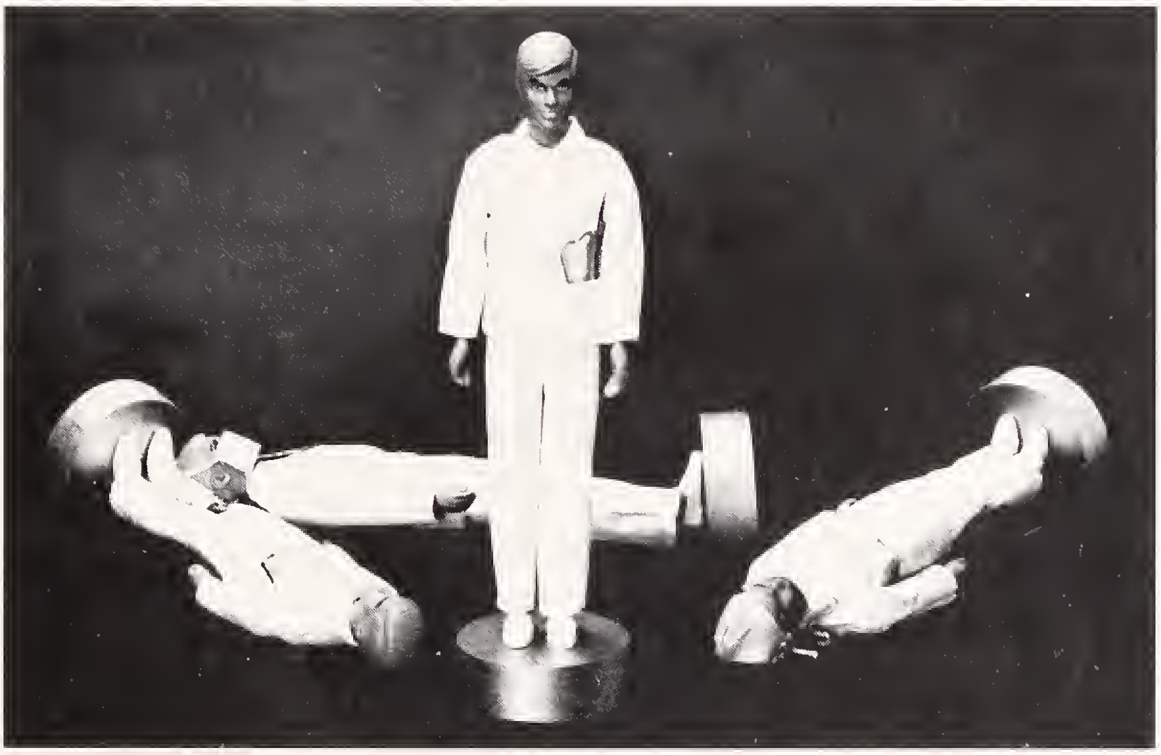

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(methacycline HCl)

CONTRAINDICATIONS: Hypersensitivity to any of the tetracyclines.
WARNINGS: Tetracycline usage during tooth development (last half of pregnancy to eight years) may cause permanent tooth discoloration (yellow-gray-brown), which is more common during long-term use but has occurred after repeated short-term courses. Enamel hypoplasia has also been reported. **Tetracyclines should not be used in this age group unless other drugs are not likely to be effective or are contraindicated.**
Usage in pregnancy. (See above **WARNINGS** about use during tooth development.)

Animal studies indicate that tetracyclines cross the placenta and can be toxic to the developing fetus (often related to retardation of skeletal development). Embryotoxicity has also been noted in animals treated early in pregnancy.
Usage in newborns, infants, and children. (See above **WARNINGS** about use during tooth development.)

All tetracyclines form a stable calcium complex in any bone-forming tissue. A decrease in fibula growth rate observed in prematures given oral tetracycline 25 mg/kg every 6 hours was reversible when drug was discontinued.

Tetracyclines are present in milk of lactating women taking tetracyclines.

To avoid excess systemic accumulation and liver toxicity in patients with impaired renal function, reduce usual total dosage and, if therapy is prolonged, consider serum level determinations of drug. The anti-anabolic action of tetracyclines may increase BUN. While not a problem in normal renal function, in patients with significantly impaired function, higher tetracycline serum levels may lead to azotemia, hyperphosphatemia, and acidosis.

Photosensitivity manifested by exaggerated sunburn reaction has occurred with tetracyclines. Patients apt to be exposed to direct sunlight or ultraviolet light should be so advised, and treatment should be discontinued at first evidence of skin erythema.
PRECAUTIONS: If superinfection occurs due to overgrowth of nonsusceptible organisms, including fungi, discontinue antibiotic and start appropriate therapy.

In venereal disease, when coexistent syphilis is suspected, perform darkfield examination before therapy, and serologically test for syphilis monthly for at least four months.

Tetracyclines have been shown to depress plasma prothrombin activity; patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage.

In long-term therapy, perform periodic organ system evaluations (including blood, renal, hepatic).

Treat all Group A beta-hemolytic streptococcal infections for at least 10 days.

Since bacteriostatic drugs may interfere with the bactericidal action of penicillin, avoid giving tetracycline with penicillin.
ADVERSE REACTIONS: Gastrointestinal (oral and parenteral forms): anorexia, nausea, vomiting, diarrhea, glossitis, dysphagia, enterocolitis, inflammatory lesions (with monilial overgrowth) in the anogenital region.
Skin: maculopapular and erythematous rashes; exfoliative dermatitis (uncommon). Photosensitivity is discussed above (See **WARNINGS**).
Renal toxicity: rise in BUN, apparently dose related (See **WARNINGS**).
Hypersensitivity: urticaria, angioneurotic edema, anaphylaxis, anaphylactoid purpura, pericarditis, exacerbation of systemic lupus erythematosus.

Bulging fontanels, reported in young infants after full therapeutic dosage, have disappeared rapidly when drug was discontinued.
Blood: hemolytic anemia, thrombocytopenia, neutropenia, eosinophilia.

Over prolonged periods, tetracyclines have been reported to produce brown-black microscopic discoloration of thyroid glands; no abnormalities of thyroid function studies are known to occur.
USUAL DOSAGE: Adults — 600 mg daily, divided into two or four equally spaced doses. More severe infections: an initial dose of 300 mg followed by 150 mg every six hours or 300 mg every 12 hours. Gonorrhea: In uncomplicated gonorrhea, when penicillin is contraindicated, 'Rondomycin' (methacycline HCl) may be used for treating both males and females in the following clinical dosage schedule: 900 mg initially, followed by 300 mg q.i.d. for a total of 5.4 grams.

For treatment of syphilis, when penicillin is contraindicated, a total of 18 to 24 grams of 'Rondomycin' (methacycline HCl) in equally divided doses over a period of 10-15 days should be given. Close follow-up, including laboratory tests, is recommended.

Eaton Agent pneumonia: 900 mg daily for six days.
Children — 3 to 6 mg/lb/day divided into two to four equally spaced doses.

Therapy should be continued for at least 24-48 hours after symptoms and fever have subsided.
Concomitant therapy: Antacids containing aluminum, calcium or magnesium impair absorption and are contraindicated. Food and some dairy products also interfere. Give drug one hour before or two hours after meals. Pediatric oral dosage forms should not be given with milk formulas and should be given at least one hour prior to feeding.

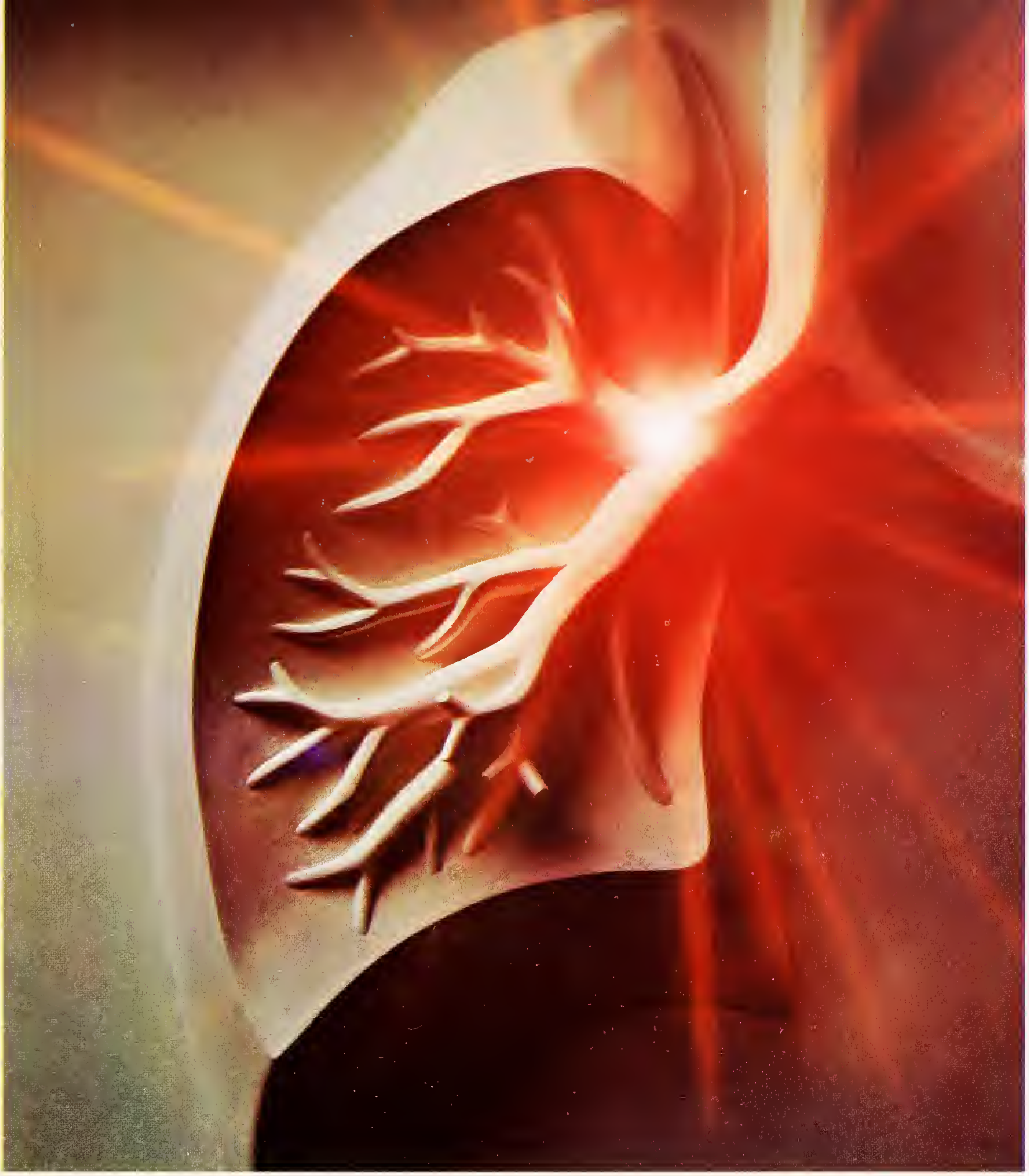
In patients with renal impairment (see **WARNINGS**), total dosage should be decreased by reducing recommended individual doses or by extending time intervals between doses.

In streptococcal infections, a therapeutic dose should be given for at least 10 days.
SUPPLIED: 'Rondomycin' (methacycline HCl): 150 mg and 300 mg capsules; syrup containing 75 mg/5 cc methacycline HCl.

Before prescribing, consult package circular or latest PDR information.

Rev. 6/73

WALLACE LABORATORIES
CRANBURY, NEW JERSEY 08512



When the focus is on bronchitis due to susceptible strains of *H. influenzae* and pneumococci*

Rondomycin® 300 mg. Capsules

[methacycline HCl]

Delivers from the very first dose:

Studies show that after the first dose serum levels rapidly rise above minimum *in vitro* inhibitory concentrations

*Since many strains are known to be resistant, routine sensitivity testing is recommended.

Help relieve pain, restore mobility with

PARAFON FORTE® Tablets

chlorzoxazone † 250 mg.; acetaminophen 300 mg.

*This drug has been evaluated as "probably" effective for this indication.

See brief summary of prescribing information on facing page for Indications,
Contraindications, Warnings, Precautions and Adverse Reactions.

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PARAFON FORTE® tablets help relieve pain, restore mobility and stop pain-spasm feedback by providing:

a nonsalicylate analgesic equal to aspirin for relief of pain,[1,2] yet unlikely to cause the gastric irritation,[2,3] allergic reactions[2] or increased bleeding time[4] associated with aspirin therapy...

and a skeletal muscle relaxant shown in extensive clinical studies to afford relief of discomfort in acute musculoskeletal conditions*[5-7] but which is not an antihistamine or tranquilizer derivative and is unlikely to produce a tranquilizing or sedative effect.[5,7,8]

* **Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Probably" effective as an adjunct to rest and physical therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Chlorzoxazone does not directly relax tense skeletal muscles in man.

Contraindications: Sensitivity to either component.
Warnings: *Usage in Pregnancy*—Use in women of childbearing potential only when potential benefits outweigh possible risks.
Precautions: Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or any signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped.
Adverse Reactions: Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, chlorzoxazone may possibly have been associated with gastrointestinal bleeding. While PARAFLEX® (chlorzoxazone) tablets and other chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately twenty-four patients, it was not possible to state that the dysfunction was or was not drug induced.
Usual Adult Dosage: Two tablets q.i.d.
Supplied: Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R.C., and Grossman, A.J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L.S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4. New York, The Macmillan Company, 1970. **3.** Vickers, F.N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C.H., Jr., and Britten, A.F.H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Vernon, W.G.: Curr. Therap. Res. *14*:801, 1972. **6.** Scheiner, J.J.: Curr. Therap. Res. *14*:168, 1972. **7.** Walker, J.M.: Curr. Therap. Res. *15*:248, 1973. **8.** Data on file, McNeil Laboratories, Inc.

† U.S. Patent No. 2,895,877

McNEIL
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Fort Washington, Pa. 19034

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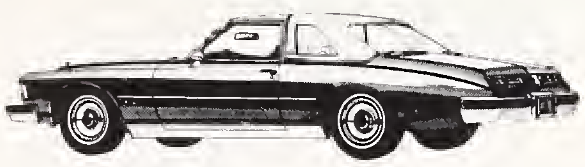

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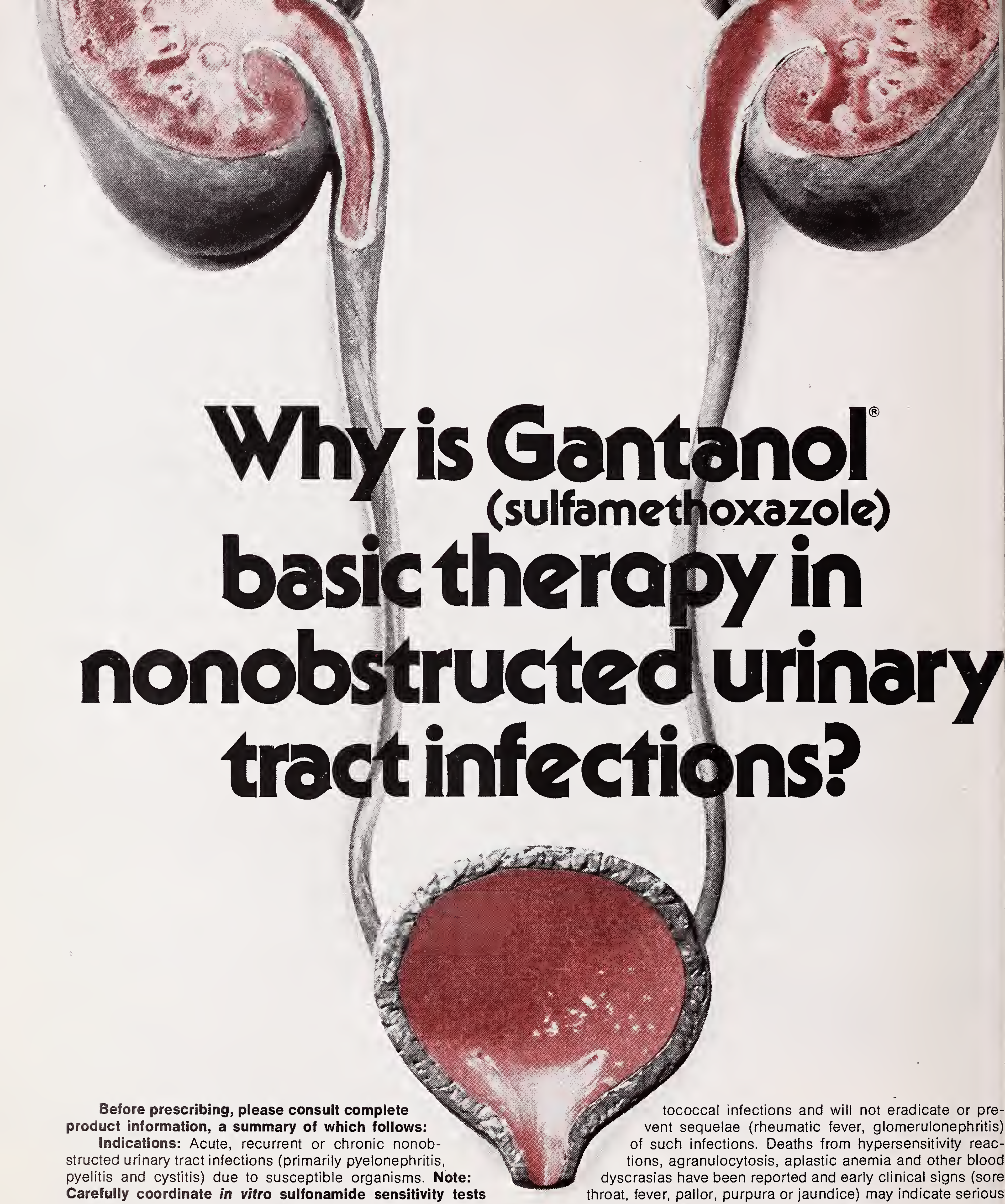

Why is Gantanol® (sulfamethoxazole) basic therapy in nonobstructed urinary tract infections?

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute, recurrent or chronic nonobstructed urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms. **Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides, especially in chronic or recurrent urinary tract infections.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than two months of age.

Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, pur-

Because it is considered a good choice...

- for efficacy in nonobstructed cystitis, pyelonephritis and pyelitis
- for control of susceptible *E. coli, Klebsiella-Aerobacter, Staph. aureus, Proteus mirabilis* and, less frequently, *Proteus vulgaris*
- for prompt antibacterial blood and urine levels in from 2 to 3 hours after initial 2-gram adult dose
- for economical around-the-clock coverage
- for maximum patient cooperation with easy-to-remember B.I.D. dosage

Basic Therapy

Gantanol®

(sulfamethoxazole)

Tablets/Suspension
(0.5 Gm) (0.5 Gm/teasp.)

pura, hypoprothrombinemia and methemoglobinemia); *allergic* *eactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral njection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepaitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous* *eactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis).

Usual adult dosage: 2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

Usual child's dosage: 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

Supplied: Tablets, 0.5 Gm sulfamethoxazole; Suspension, 0.5 Gm sulfamethoxazole/teaspoonful.

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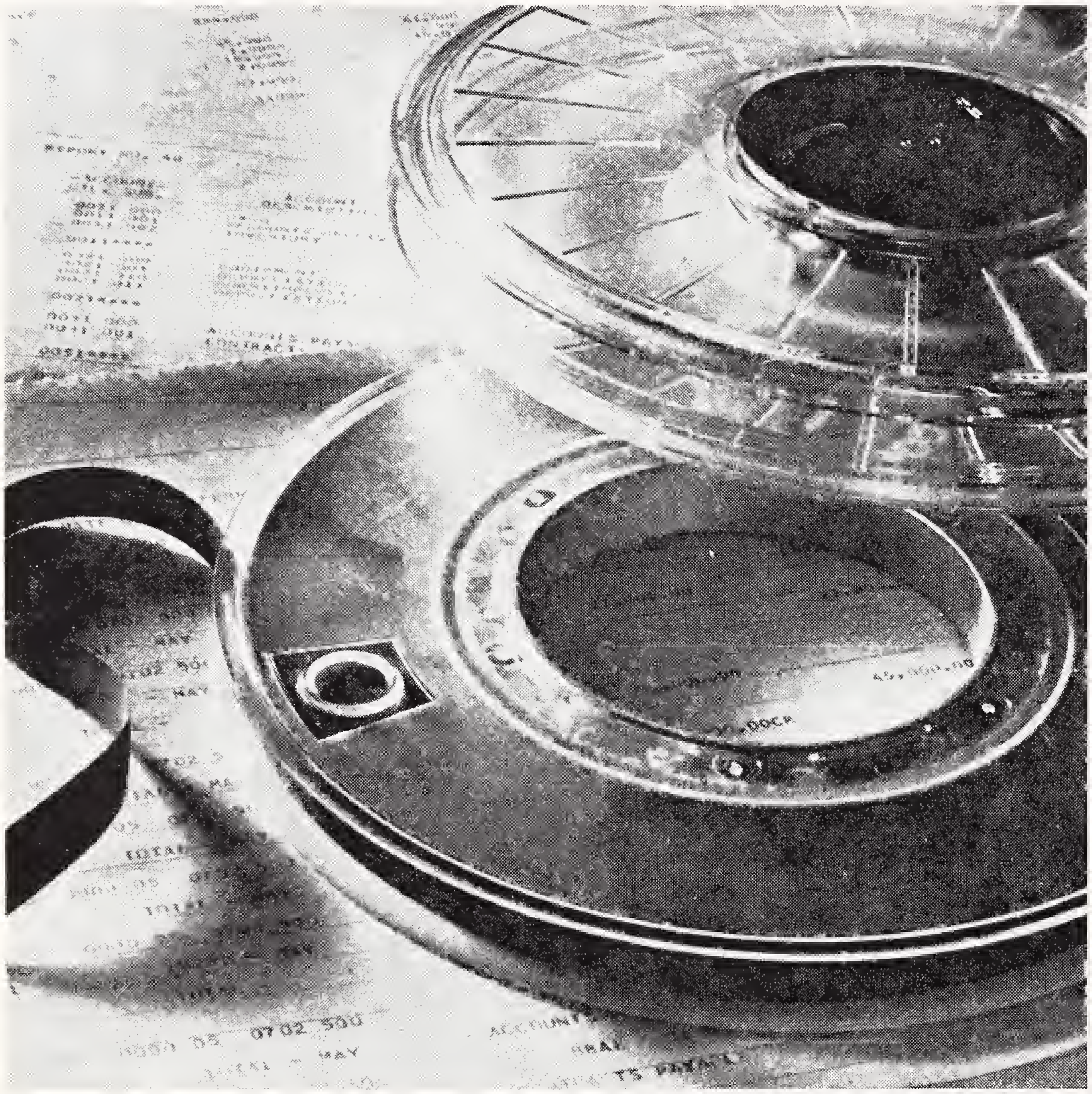
Your practice needs regular check-ups, too.



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Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

Indications: Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. Also, mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: **Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired.** Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Rarely, necrotizing vasculitis, paresthesias, icterus, pancreatitis, and xanthopsia have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

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KEEP THE HYPERTENSIVE PATIENT ON THERAPY KEEP THERAPY SIMPLE WITH

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Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Neither inconvenient potassium supplements nor special K+ rich diets needed as a rule. Just 'Dyazide' once or twice daily for maintenance.

Two prime reasons patients drop out of hypertensive therapy are (1) the patient failed to understand directions, and (2) the regimen was overly complicated. Dosage is simple with 'Dyazide', easily understood, once or twice daily, depending on response. There's no need to complicate the regimen with potassium supplements or unwieldy potassium-rich diets.

TO KEEP BLOOD PRESSURE DOWN AND KEEP POTASSIUM LEVELS UP

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FOR THE RELIEF OF SIMPLE DIARRHEA
Each fluid ounce contains: Powdered Opium, USP (Warning: May be habit forming) 24.0 mg., Kaolin 6.0 g., Pectin 142.8 mg., Hyoscyamine sulfate 0.1037 mg., Atropine sulfate 0.0194 mg., Hyoscine hydrobromide 0.0065 mg., Sodium benzoate (Preservative) 60.0 mg., Alcohol 5.0 per cent
SHAKE WELL
AND ALL MEDICINES
CHILDREN

“A.H. Robins asked me to compare the banana flavor of their Donnagel® -PG with the real thing and, by jove, I couldn’t tell the difference. Not even in sip-by-sip comparison. Amazing!

“There’s no unpleasant paregoric taste because there’s no paregoric. Clever, wouldn’t you say? Instead, A. H. Robins uses the therapeutic equivalent, powdered opium, to promote the production of formed stools and lessen the urge. And Donnagel-PG also provides the demulcent-detoxicant effects of kaolin and pectin, plus the antispasmodic benefits of belladonna alkaloids.

“But what I find most impressive is the skillful manner in which A. H. Robins has combined these ingredients with that delicate flavor of vintage bananas. Smashing, absolutely smashing!

“May I propose a toast?”

A-H-ROBINS

A. H. Robins Company, Richmond, Virginia 23220

Donnagel®-PG. ©

Donnagel with paregoric equivalent
Each 30 cc. contains:

Kaolin	6.0 g.
Pectin	142.8 mg.
Hyoscyamine sulfate	0.1037 mg.
Atropine sulfate	0.0194 mg.
Hyoscine hydrobromide	0.0065 mg.
Powdered opium, USP (equivalent to paregoric 6 ml.) (warning: may be habit forming)	24.0 mg.
Sodium benzoate (preservative)	60.0 mg.
Alcohol, 5%	

© Available on oral prescription or without prescription in compliance with applicable state and local law.

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Robitussin A-C
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Cough Calmers
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IN COUGHS OF COLDS, 'FLU,' AND U.R.I.: CLEAR THE TRACT WITH THE ROBITUSSIN® LINE

Fall and winter coughs are back. Time to help clear the lower respiratory tract with the five Robitussins and Cough Calmers. All contain glyceryl guaiacolate, the efficient expectorant that works systemically to help increase the output of lower respiratory tract fluid. The enhanced flow of less viscid secretions soothes the tracheobronchial mucosa, promotes ciliary action, and makes thick, inspissated mucus less viscid and easier to raise. Available on your prescription or recommendation.

For unproductive coughs

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Each 5 cc. contains:

Glyceryl guaiacolate	100 mg.
Alcohol, 3.5%	

For severe coughs

ROBITUSSIN A-C® Ⓒ

Each 5 cc. contains:

Glyceryl guaiacolate	100 mg.
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(warning: may be habit forming)	
Alcohol, 3.5%	

Non-narcotic for 6-8 hr. cough control

ROBITUSSIN-DM®

Each 5 cc. contains:

Glyceryl guaiacolate	100 mg.
Dextromethorphan hydrobromide	15 mg.
Alcohol, 1.4%	

Robitussin-DM in solid form for "coughs on the go"

COUGH CALMERS®

Each Cough Calmer contains:

Glyceryl guaiacolate	50 mg.
Dextromethorphan hydrobromide	7.5 mg.

Clears nasal and sinus passages as it relieves coughs

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Each 5 cc. contains:

Glyceryl guaiacolate	100 mg.
Phenylephrine hydrochloride	10 mg.
Alcohol, 1.4%	

MEET THE NEWEST MEMBER OF THE LINE

Comprehensive decongestant action helps control cough and clear stuffy nose and sinuses. Non-narcotic.

ROBITUSSIN®-CF

Each 5 cc. contains:

Glyceryl guaiacolate	50 mg.
Dextromethorphan hydrobromide	10.0 mg.
Phenylpropanolamine hydrochloride	12.5 mg.
Alcohol, 1.4%	

Select the Robitussin® formulation that treats your patient's individual coughing needs:	Expectorant-Demulcent	Cough Suppressant	Long-Acting (6-8 hours)	Nasal, Sinus Decongestant	Non-Narcotic
ROBITUSSIN®	●				●
ROBITUSSIN A-C®	●	●			
ROBITUSSIN-DM®	●	●	●		●
ROBITUSSIN-PE®	●			●	●
ROBITUSSIN®-CF	●	●		●	●
COUGH CALMERS®	■	■	■		■

A. H. Robins Company, Richmond, Va. 23220

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cefazolin sodium
Ampoules, equivalent to 1 Gm. of cefazolin

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Original Articles

CLINDAMYCIN-ASSOCIATED PSEUDOMEMBANOUS COLITIS

GEORGE N. KERRIHARD, M.D.
JOHN C. MUELLER, M.D.
DAVID A. SALTZMAN, M.D.
CHARLES L. KRONE, M.D.

Pseudmembranous colitis occurring after Clindamycin therapy is reported in two patients. Characteristic colonoscopic, x-ray and pathological findings are presented. Both were relatively well prior to the onset of diarrhea which was severe and associated with hypoproteinemia. Both responded to discontinuance of Clindamycin, supportive therapy and steroids. Limited colonoscopy greatly facilitated diagnosis and documention of the characteristic findings.

INTRODUCTION

Pseudomembranous colitis has been reported following the use of Lincomycin[1, 2] and recently following Clindamycin.[3, 4, 5] We wish to report two well documented cases of pseudomembranous colitis following the use of Clindamycin in which limited colonscopy was used to demonstrate the characteristic pathology.

REPORT OF CASES

Case I. A 67-year-old white male was admitted to the Tucson Veterans Administration Hospital with a history of watery diarrhea for seven days. Oral Clindamycin had been prescribed for a sinus infection two weeks prior to admission. One week prior to admission he developed ten watery bowel movements a day without blood or mucus, increasing weakness, nausea and lower abdominal cramping. The patient had a history of angina pectoris since 1946 and had a resection of an aortic aneurysm in September 1972.

Physical examination revealed a toxic acutely ill dehydrated man. Temperature was 102, pulse 120, blood pressure 125/70, respirations 20. Abdominal examination showed LLQ tenderness and guarding with hypoactive bowel sounds. X-ray film of the abdomen showed a non-specific gas pattern. WBC was 32,000 with a shift to the left. Hct. 51, and BUN 37, creatinine 2.8, electrolytes were normal, bilirubin, SGOT, alkaline phosphatase were within normal limits. Total Protein was 5.8, albumin 2.0 – falling to 4.3/1.7 by the sixth hospital day and returning to 6.4/3.0 by time of discharge. The prothrombin time was 11.5 seconds with control of 13 seconds. Fibrinogen was 348, platelet count 250,000.

The patient was admitted to the Medical ICU for observation and rehydration. On proctoscopic examination, the rectosigmoid was covered with a moist creamy membranous exudate. Smears and cultures were negative for staphylococci, enteric pathogens and ova and parasites. Limited colonoscopy was performed to better document the extent of the pathologic findings – the rectum was diffusely and uniformly involved. The membranous exudate appeared less extensive in the rectosigmoid region where discrete patches

---

From: Department of Gastroenterology, University of Arizona College of Medicine and the Tucson Veterans Administration Hospital, Tucson, Arizona.
Reprint request to: Gastroenterology Section, Department of Internal Medicine, University of Arizona, College of Medicine, Tucson, Arizona 85724 (George N. Kerrihard, M.D.).

were noted with hyperemic mucosa between patches of exudate (Fig. 1). Biopsy showed a membrane of fibrinoid necrosis adherent to ulcerated mucosa with extensive polymorphonuclear infiltrate. A barium enema showed diffuse colonic involvement without evidence of spasm or constrictions. Marked mucosal irregularity was prominent with findings suggestive of ulcerations (Fig. 2). The patient was supported with I.V. fluids, Lomotil and ACTH 75 u. I.V. daily. After four days of ACTH therapy, diarrhea had improved but abruptly increased when it was stopped. Prednisone 40 mg. was then instituted and diarrhea subsided. Proctoscopic findings returned to normal. The patient had been followed for one year and has had no recurrence of diarrhea.

Case II. A 65-year-old white woman was admitted to the Arizona Medical Center with five days of cramping abdominal pain and watery diarrhea. Patient had been placed on oral Clindamycin ten days previously for maxillary sinusitis following surgical resection of a tumor of the maxillary sinus. The patient noted 18-20 watery bowel movements a day without blood or mucus. Two days prior to admission she experienced RLQ and lower back pain accompanied by chills and fever. Physical examination revealed an acutely ill woman with temperature 37.2, pulse 120, blood pressure 170/70. Abdominal findings

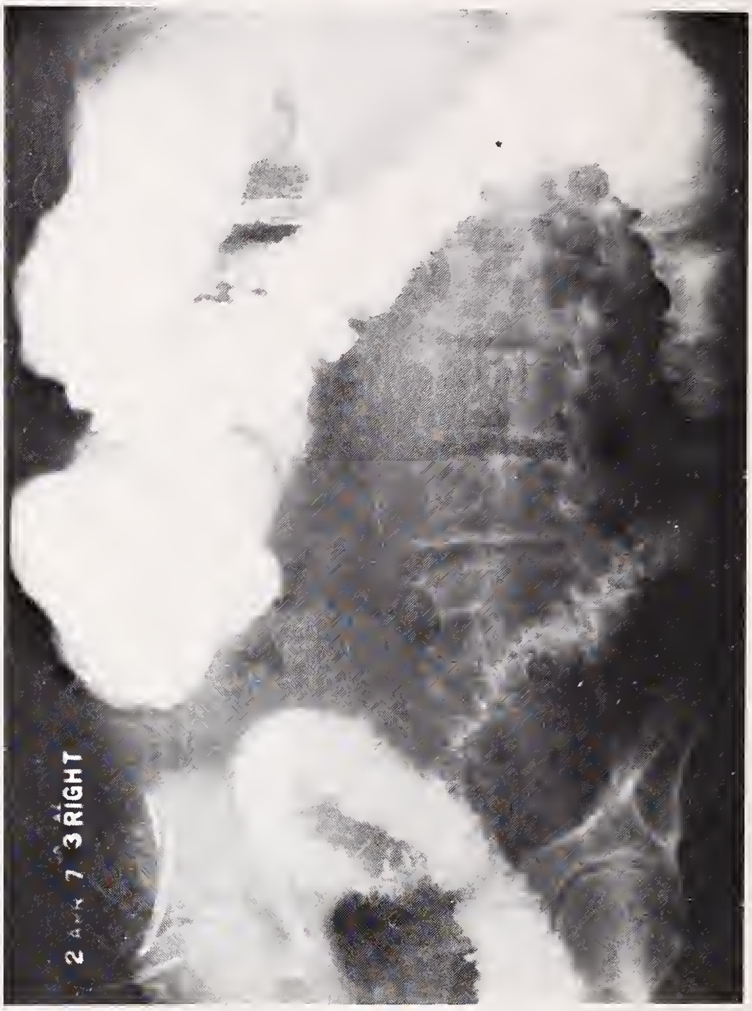

FIGURE 2
Barium enema showing diffuse colonic involvement with irregular mucosal pattern. Ulcerations are suggested in rectum and transverse colon. (Case I)

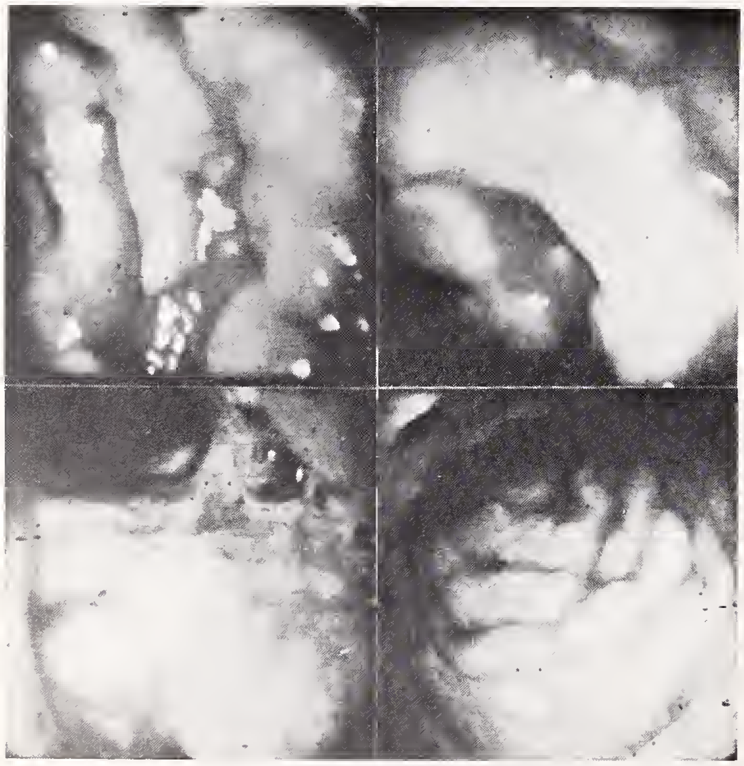

FIGURE 1
Multiple views of rectum and rectosigmoid areas showing diffuse as well as typical plaque-like pseudomembranes. (Case I)

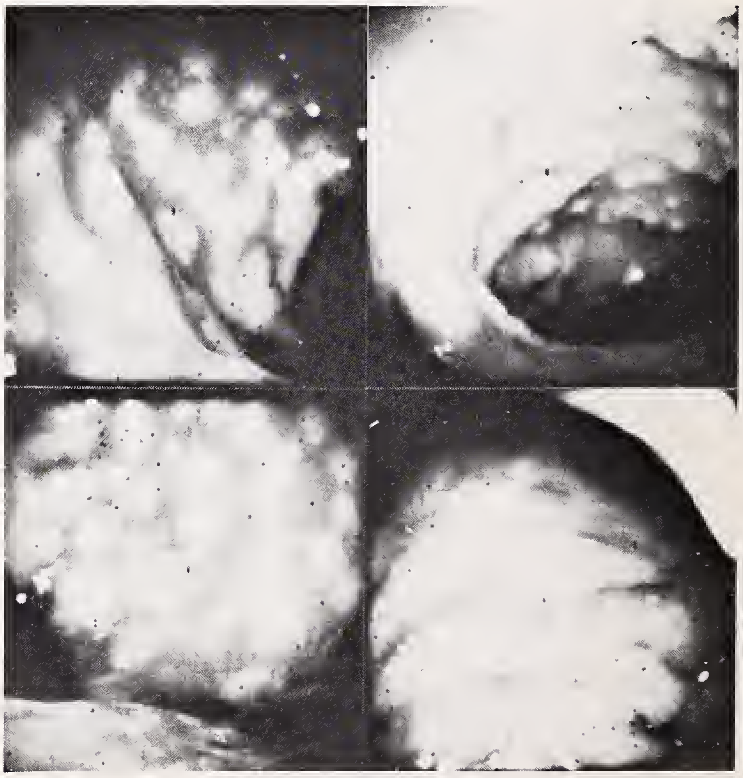

FIGURE 3
Multiple views of rectosigmoid showing characteristic pseudomembranous lesions. (Case II)

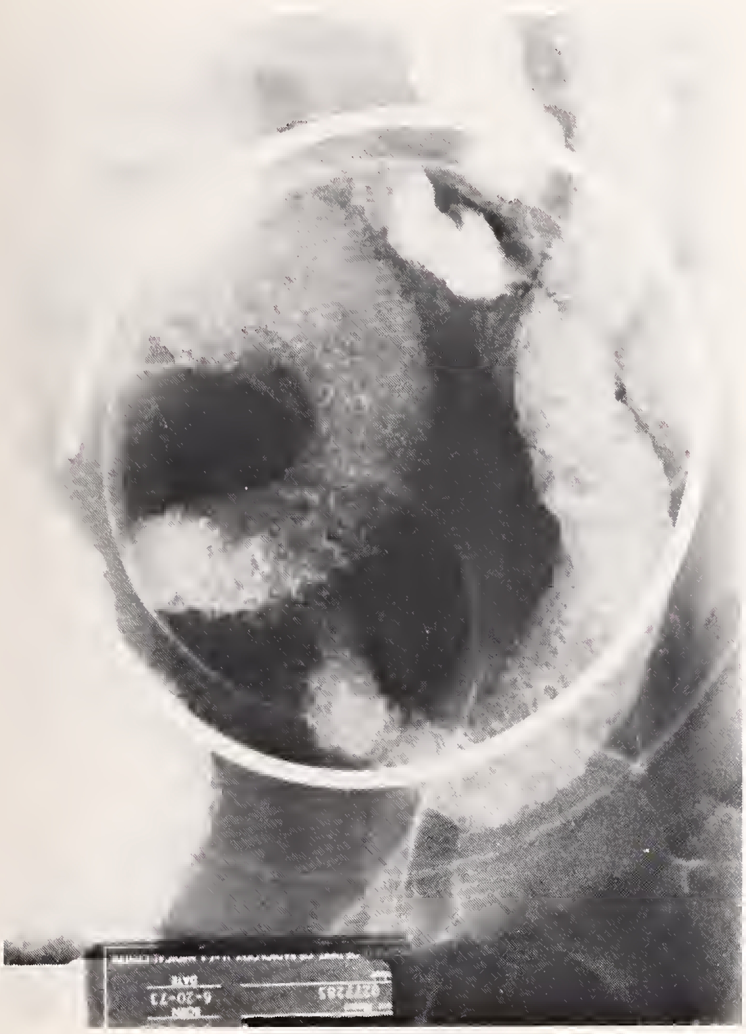

FIGURE 4
Coned down view of the sigmoid region with markedly abnormal mucosal pattern. The entire colon was involved with a similar process. (Case II)

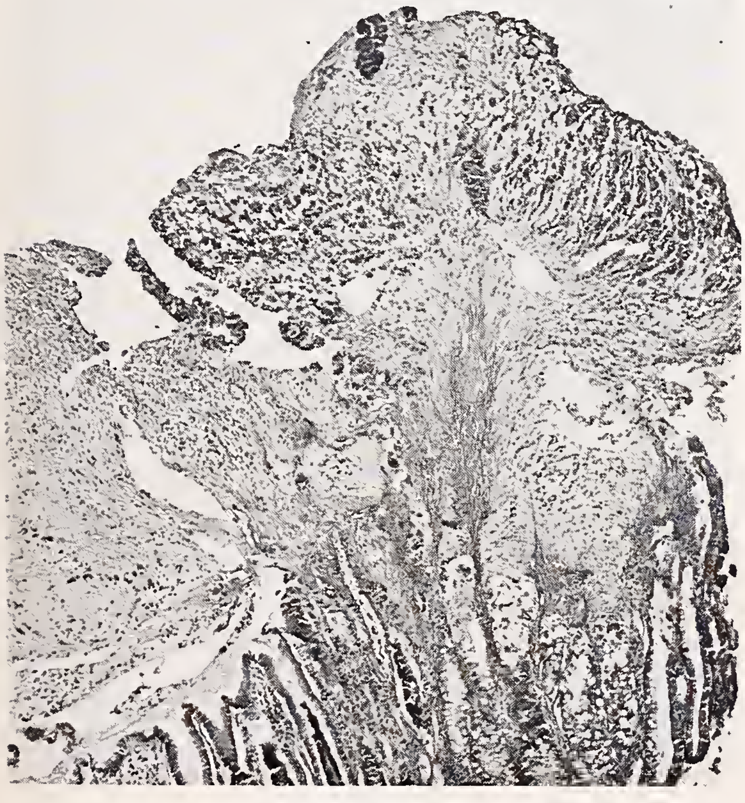

FIGURE 5
Photomicrograph of rectal biopsy. Focal fibrinoid necrosis of the surface of the mucosal epithelium with adherent membrane composed of fibrin, mucus and neucocyltes (H&E X 46). (Case II)

showed an old appendectomy scar, RLQ tenderness and hypoactive bowel sounds. An x-ray of the abdomen showed a non-specific gas pattern. Proctoscopic examination showed a diffuse creamy white moist adherent exudate. The following day a limited colonscopic examination was performed to better document the findings above rectosigmoid area. Numerous patchy lesions were noted with erythematous normal appearing mucosa (Fig. 3). A barium enema revealed diffuse colonic involvement with markedly abnormal mucosal detail (Fig. 4). Initial lab values showed a WBC of 25,000 with a left shift, normal electrolytes and BUN. Stool examination was negative for ova and parasites and stool culture revealed no enteric pathogen or staphylococcus. Biopsy showed fibrinoid necrosis characteristic of pseudomembranous colitis (Fig. 5). Bilirubin, SGOT, alkaline phosphatase were within normal limits as were prothrombin time, and platelet count. Fibrinogen was 470, total protein 3.7, albumin 2.3.

The patient was treated with high dose steroids, Cephalothin, Gentamicin and I.V. fluids and three days after admission the patient had increasing abdominal distention, nausea, vomiting and absent bowel sounds. The white count rose to 43,000 and a plain and upright film of the abdomen suggested a small bowel obstruction. The following day a laparotomy was performed and a small bowel obstruction due to an adhesion was relieved. The colon appeared thickened and edematous. Postoperatively, the patient gradually improved while on high doses of steroids and antibiotics. Colonscopy prior to discharge showed normal appearing mucosa. Nine month follow-up revealed no recurrence of diarrhea.

COMMENT

Both cases illustrate the classic proctoscopic, roentgenologic and histopathologic findings of pseudomembranous colitis. Both patients were well prior to the onset of diarrhea and had no predisposing factor for the development of this condition such as surgery, colonic obstruction or generalized debilitating illnesses. The onset was characteristically 5-7 days after onset of Clindamycin therapy and both patients recovered slowly after institution of supportive therapy, steroids and the discontinuance of Clindamycin. Cultures failed to reveal any enteric pathogens or staphylococcal overgrowth. Both had hypoproteinemia probably due to gastrointentinal loss although it was not specifically measured, and there was no evidence of generalized disseminated intravascular coagulation.

In both patients the proctoscopic findings were initially suggestive of pseudomembranous colitis with the rectal area totally involved with a diffuse creamy exudate covered by liquid stool. Limited colonoscopy greatly facilitated in establishing the diagnosis by allowing the visualization of a greater portion of the involved area and the characteristic patchy nature of the lesion which wasn't apparent on proctoscopic examination. Limited colonscopy was well tolerated by both patients. No attempt was made to use excessive air pressure or to insert the colonscope beyond the rectosigmoid area. The photographic documentation via the colonscope was a great added advantage making it possible for many other physicians to see the characteristic lesions not commonly seen by many physicians.

DISCUSSION

Pseudomembranous colitis is a distinct entity defined by its morphologic and histopathologic characteristic.[5, 6] It has been described under a variety of syndromes which have attempted to either define the pathologic findings or the possible associated causative factors. Prior to the antibiotic era it was reported in a setting of a severely ill or stressed patient: shock, surgery, uremia and colonic obstruction.[5, 7, 8, 9, 10] With the introduction of antibiotics, it has been described with the use of a wide variety of antibiotics. Staphylococcal overgrowth was, at one time, felt to be an important etiological factor.[11, 12, 13, 14] Subsequent reports have failed to incriminate the Staphylococcus as a consistent causative agent.[15, 16, 17] Direct toxicity has been suspected and cases have been reported occurring with Lincomycin therapy at a frequency much higher than other antibiotics.[1, 2] On the basis of the similarity between Lincomycin and Clindamycin it was predicted that cases would occur in the setting of Clindamycin therapy.[1, 2] Whether this is a direct drug toxicity or an alteration in bacterial flora with the production of toxic substances is unknown. Both Lincomycin and Clindamycin have been shown to be active against anaerobes, the major flora of the colon.[18]

Whitehead has suggested that a localized form of disseminated intravascular coagulation might be the underlying pathological process and that there was evidence of a possible generalized disseminated intravascular coagulation found in other organ tissues.[19] In both of our patients there was no evidence of generalized disseminated intravascular coagulation. In both of our patients the mucosa of the rectum was most severely involved while areas higher in the colon revealed the more typical lesions. Early recognition of pseudomembranous colitis should enable more detailed bacteriologic studies and possible isolation of toxic substances.

The therapy for pseudomembranous colitis is largely supportive with the discontinuance of the offending antibiotic. Although the role of steroids is controversial, both of our patients improved on steroid therapy; the relapse of Case I when ACTH was withdrawn and his prompt improvement when Prednisone was instituted are provocative and a more controlled trial is in order.

Nonproprietary and Trade Names of Drugs

1. Clindamycin hydrochloride hydrate — Cleocin.
2. Lincomycin hydrochloride monohydrate — Lincocin.
3. Diphenoxylate hydrochloride with atropine — Lomotil.
4. Corticotropin — ACTH.
5. Cephalothin sodium — Keflin.
6. Gentamicin sulfate — Garamycin.

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RENAL PSEUDOCYSTS

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RENAL PSEUDOCYSTS

Urinary extravasation in the region of the kidney and upper part of the ureter may result in an encapsulation forming a pseudocyst, which may assume a multiplicity of sizes, shapes, and locations. Under certain circumstances recognition of the entity may be difficult and significant renal damage may occur. The purpose of this report is to focus attention on the diagnostic and clinical implications of this pathologic process and to stimulate awareness of its presence.

CASE I

PERIPELVIC PSEUDOCYSTS

L. B. was a 73-year-old white male admitted to Maricopa County General Hospital suffering from thrombophlebitis of the left leg followed by pulmonary embolism and inferior myocardial infarction. The clinical course was complicated by a left pleural effusion and pulmonary edema.

Excretion urography was performed because of a history of dysuria and frequency. The right upper urinary tract was not remarkable. The left pelvis and calyces were displaced cephalad. The calyces were elongated but were slightly dilated with flattening of the papillae. There was no evidence of destruction, the contours being smooth. The appearance suggested a mass in the left renal pelvis (Fig. 1). The differential diagnosis included peripelvic pseudocyst.

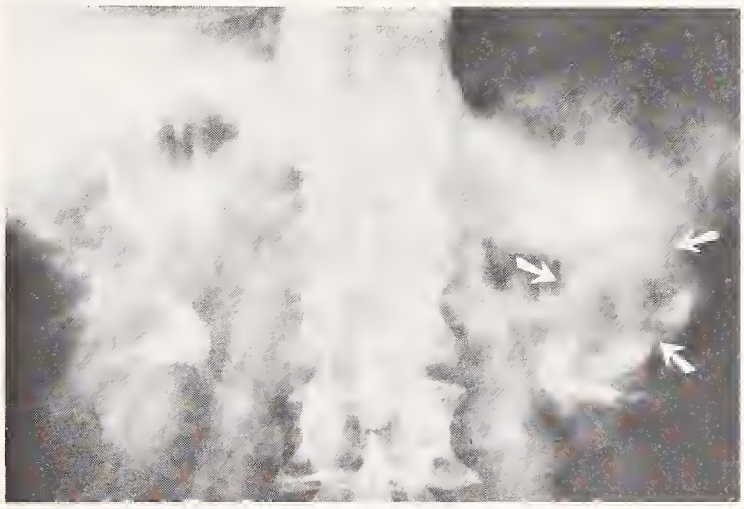

FIGURE 1
Peripelvic Pseudocyst — Round radiolucent shadow (arrows) encroaching upon and displacing pelvis and dilated calyces of left kidney with no evidence of destruction.

On closer questioning, the patient recalled an accident at age 10 years when he was kicked by a horse and suffered a ruptured kidney. Ten years ago when hospitalized for prostatic hypertrophy, an excretion urography was done which

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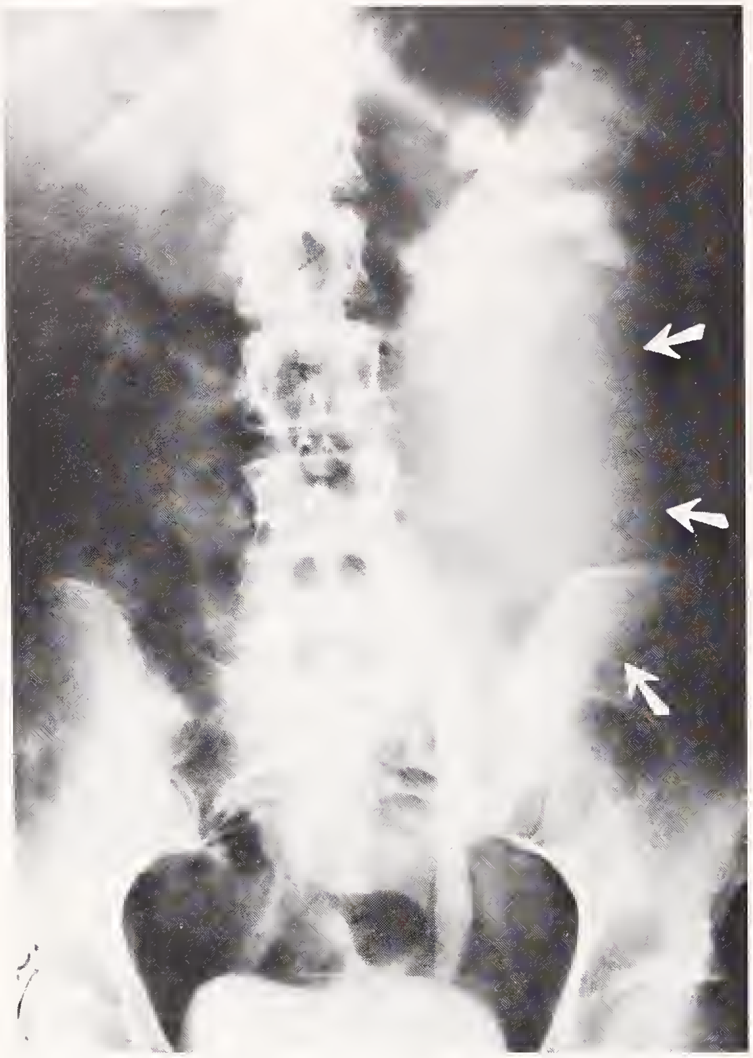
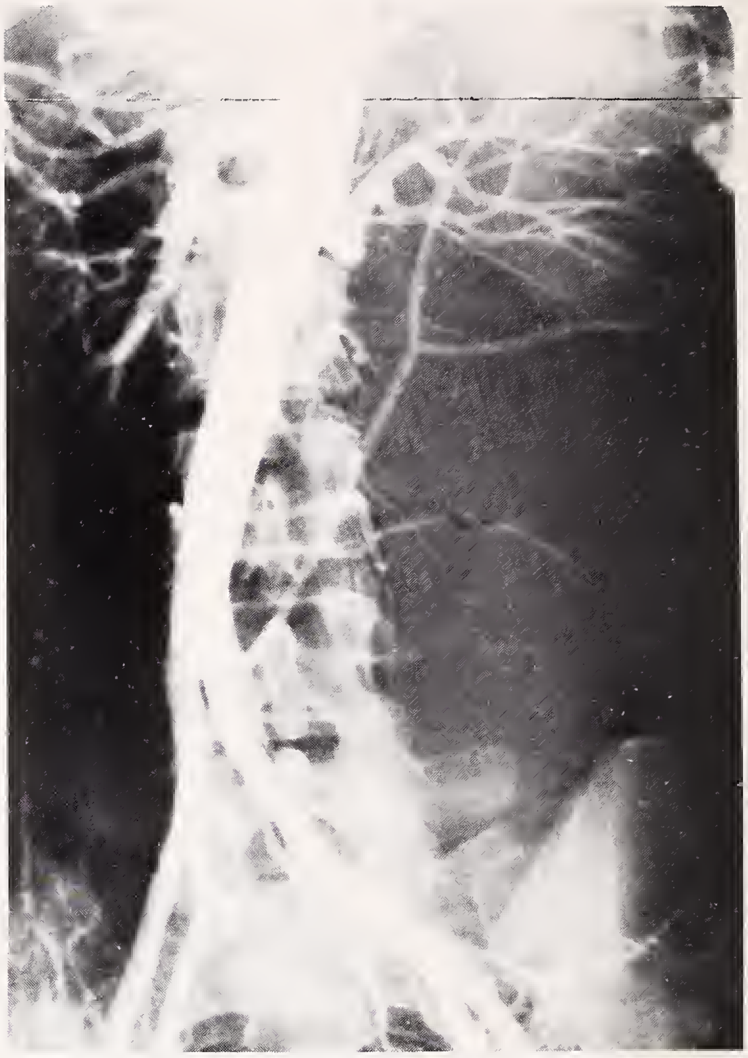
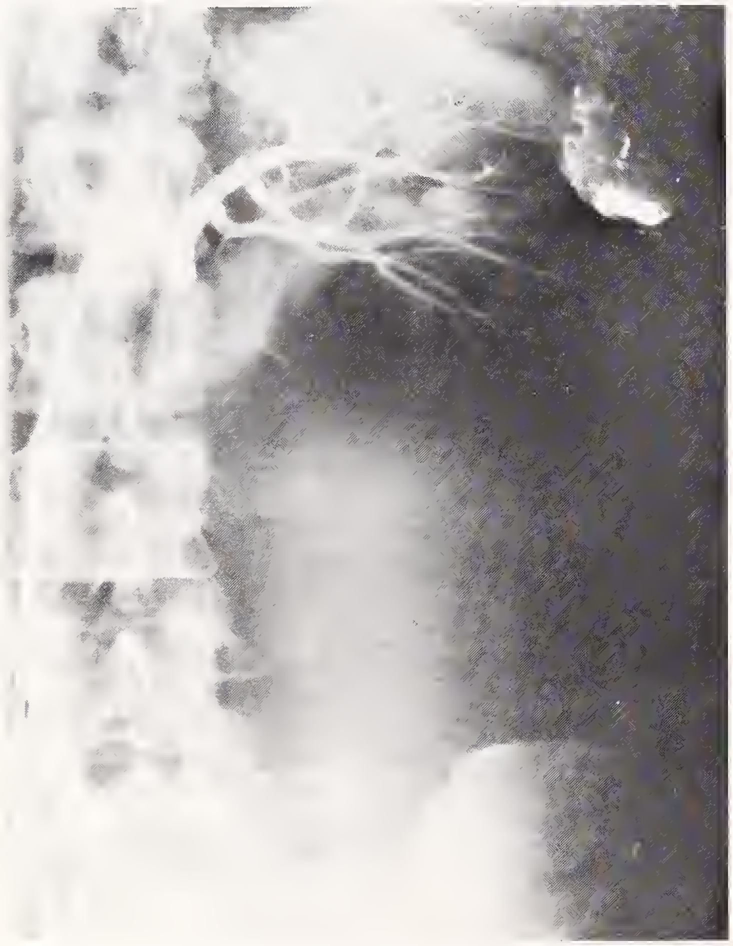


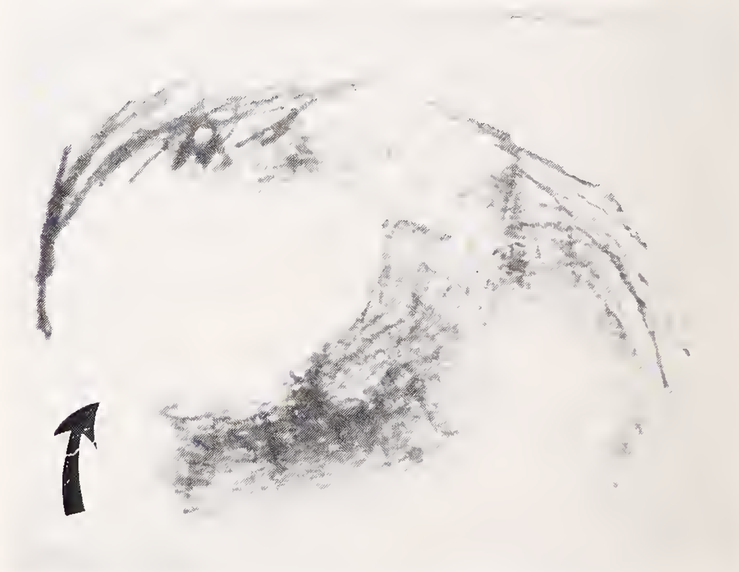
a. Large soft-tissue shadow in left flank extending slightly below iliac crest (arrows).



b. Flush aortic arteriogram showing displacement of aorta to the right and left kidney cephalad.



c. Selective left renal arteriogram demonstrating displacement of left renal artery and branches cephalad. Residual barium from previous colon examination is present laterally.



d. Ultrasonogram (supine transverse scan) shows an echo-free lesion (arrow) with sharp margination — typical of a cystic lesion.

FIGURE 2
Pararenal Pseudocyst

showed no abnormalities aside from prostatic hypertrophy (according to the report: the films are no longer available).

CASE II
PARARENAL PSEUDOCYST

This 49-year-old white female was admitted to the Maricopa County General Hospital on July 9, 1974 with a several week history of nausea, vomiting, anorexia and weight loss. A left abdominal mass had been noted on June 27, 1974. There was no other signifcant history except for a psychiatric disorder.

The physical examination was not remarkable except for the left-sided abdominal mass. Pelvic examination initially was thought to be normal.

During the work-up, an intravenous urogram revealed non-visualization on the right. There was a large mass in the lower pole of the left kidney with marked ureteral dilation (Fig. 2a). Renal arteriogram confirmed non-function of the right kidney. The left renal artery appeared normal. The left kidney was displaced superiorly by an avascular retroperitoneal mass which also displaced the aorta to the right (Fig. 2b, c). There were similar findings on a renal scan. Liver, spleen and brain scans were normal. Ultrasonography demonstrated a large echo over the left-sided mass; there were no internal echoes; the mass had a sharp margin and increased sound transmission (Fig. 2d). These features were consistent with a cystic mass, but extensive hydronephrosis was not excluded.

Pelvic examination was repeated under anesthesia and a Stage 3B or Stage 4 squamous cell carcinoma of the cervix was found with the tumor mass fixed to the lateral walls of the pelvis bilaterally. Cystoscopy revealed invasion of the lower bladder and trigone era accounting for the urographic demonstration of bilateral obstructive urinary disease. These findings were considered diagnostic of pararenal pseudocyst, etiology unknown, in a patient suffering from advanced carcinoma of the pelvis.

CASE III
URINOMA

A 50-year-old female with known hyperparathyroidism and renal calculi was admitted to the hospital for a nephrolithotomy.

Post-operatively the patient developed pain and a tender mass in the right flank. Excretory urography demonstrated a large mass opacifying with contrast medium at the inferior pole of the right kidney. Surgical exploration revealed an encapsulated collection of urine at the nephrolithotomy site (Fig. 3) apparently resulting from extravasation at the kidney suture line.

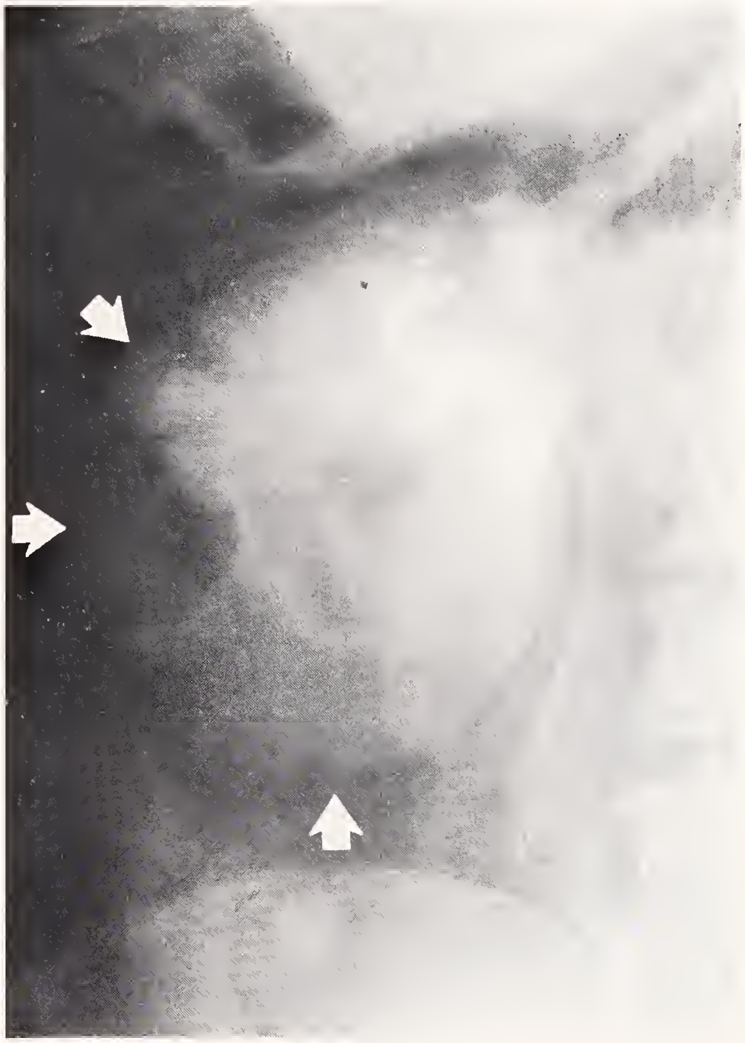


FIGURE 3

Urinoma — Soft tissue mass (arrows) in lower pole of right kidney with contrast material extravasating into it.
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SUMMARY OF RADIOGRAPHIC FINDINGS

A plain roetngenogram of the abdomen may show a smoothly marginated mass of water-density adjoining the renal shadow and at times separable from it. The renal shadow or ureter may be displaced or rotated in any direction even to the opposite side. The psoas border may be obscured.

Excretory urography confirms the displacement of the kidney or ureter or both. Compression, distortion, and displacement of the pelviocalyceal system may be present with occasional obstruction but with no irregularity to suggest destruction. The mass may become opacified if contrast medium extravasates into it. Retrograde urography may be confirmatory and may disclose the point of rupture.

Renal angiography discloses the avascular nature of the mass. Ultrasonography confirms the cystic character of the mass.

History of a mass, often enlarging, following blunt trauma or renal or ureteral surgery even after an interval of many months or years should raise the suspicion of a renal pseudocyst in the differential diagnosis.

DISCUSSION

Renal pseudocysts are reported under various titles including urinoma: pararenal pseudocyst: hydrocele renalis: pararenal pseudohydronephrosis: peripelvic cyst: traumatic perirenal and perinephric cyst. This classification is largely topographic and does not imply a common pathogenesis. The lesion may be slowly progressive and is usually associated with hydronephrosis.

Spriggs[1] classified the perinephric group as (1) perinephric extravasation of urine, (2) perinephric hematoma, (3) perinephric cysts of doubtful origin. Jordan[2], described three groups: (1) between the two layers of the capsule, (2) between the capsule and the parenchyma, (3) an ostensibly separate peripelvic lymphatic cyst formation.

Perirenal cysts may be true or acquired. The *acquired cyst* is due to chronic urinary extravasation in the region of the kidney and upper segment of the ureter. When the urine has no avenue of escape or drainage, an encapsulated sac of urine may result.[3] These acquired lesions may arise either from spontaneous rupture of cystically-dilated nephrons or from traumatic laceration of the renal parencyma or collecting system. Either process permits extravasation of urine into the perirenal fascia which will continue so long as bleeding is minimal so that fibrin does not seal the point of rupture. Two cyst-like entities may result from trauma: (1) perinephric hematoma or (2) a large urinous sac about the kidney, the so-called hydrocele renalis. The shell may be calcified. The renal capsule forms part of the pseudocyst wall so that the kidney is partially or almost wholly surrounded by the cyst. Trauma is often associated with discovery of the cysts and may obscure a congenital origin. Some of these cysts have been classified as pseudohydronephrosis. They might be due to defective development of the kidney in early phases of growth, indicating that some of the tubules had become obliterated, failed to atrophy or later failed to fuse with the excretory system.

Hydrocele renalis, on the other hand, is a condition in which the renal capsule forms part of the cyst wall so that the kidney is partially or almost wholly surrounded by the cyst. It is seen more often in adults, rarely in infants.

True pararenal cysts are those formed from the Wolffian duct, Müllerian ducts, lymph spaces and dermoid inclusions.[4] Wolffian duct cysts are the result of cystic dilatations of the ureter or remnants of pronephric, mesonephric or metanephric structures. There is a thin fibrous wall lined with epithelial cells. Müllerian duct cysts occur in the lower abdomen. Peripelvic lymphatic cysts are included in the perinephric form of fluid collections, and are lymphatic distensions associated with obstruction of the lymphatic trunks of the kidney hilus.[5] They may be perinephric and may be extrinsic to the capsule or within the capsule. Most cases come to attention because of laceration of the kidney by blunt abdominal or accidental surgical trauma.

Crabtree[6] listed three factors as necessary to the production of a pseudocyst: (1) complete tear of a collecting system, a calyx, a ureter or a renal pelvis, (2) failure of the defect to close prior to the escape of a large amount of urine, (3) the presence of an obstructed ureter distal to the injury. The diagnosis is based on the history of injury, tenderness in the region of the costovertebral angles, mass (of hematoma) in the flank, hematuria and the findings of excretory urography and retrograde pyelography. If the initial complications of trauma are survived, delayed serious sequelae may result. These include scarring, infarction with fibrosis or cystic degeneration, perirenal abscess, hydronephrotic dilatation or atrophy, hypertension and renal insufficiency. Rabazzioni[7] produced pseudohydronephrosis experimentally with complete lipolysis within 5 days of continued extravasation. Sturdy and Magell[8] reported a perinephric cyst 11 days after injury. This presented as a collection of fluid within the renal fascia outside the renal capsule and communicating with a hydronephrotic pelvis. It emptied completely with change in posture.

A rather distinctive gross and histologic variant requiring differentiation is thought to be produced in the peripelvic tissues by sterile urine that has been extravasated through a disrupted calyceal or pelvic wall. It has been referred to as "peripelvic urine granuloma." To the unaided eye, the lesions appear as sharply defined, opaque, yellow foci, up to one centimeter in diameter, within the pericalyceal peripelvic fat. The histologic picture is that of relatively avascular fibrosis surrounding eosinophilic, hyaline, sparsely nucleated PAS positive tissue resembling amyloid in sections stained with eosin but staining negatively for amyloid. Macrophages and fibroblasts are present in this material.[9, 10] These lesions were found in about one per cent of consecutive autopsies and are thought to occur in areas disrupted directly by the erosive apposition of calculi to the mucosa or indirectly through the effects of urine behind pressure from a calyx or pelvis blocked by stones.[9] These granulomas do not compromise renal function.

Peripelvic cysts of the kidney should be suspected when there is a bizarre distortion of the renal pelvis by a mass which may compress the pelvis sufficiently to cause pyelectasis and predispose to pyelonephritis. The condition must be differentiated from renal sinus lipomatosis and neoplasia. There may be evidence of masses about the central portion of the calyces. Calcification of the cyst wall is uncommon. The mass is avascular by arteriogram. Unlike the simple cysts of the kidney, the mass is not surrounded by opacified renal parenchyma and therefore appears lucent by tomography.

CONCLUSIONS

1. Renal pseudocysts may be of congenital or acquired origin.
2. Radiologic, pathologic, and clinical features of this entity are discussed.
3. History of previous blunt abdominal trauma or renal surgery should alert the physician to the possibility of a renal pseudocyst especially in the presence of an enlarging flank mass.
4. Inasmuch as serious sequelae such as hydronephrosis and loss of renal function may occur, serial follow-up urography in patients with renal trauma is recommended.

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PSYCHOLOGICAL ASPECTS OF EPILEPSY

HERBERT L. COLLIER, Ph.D.

EPILEPSY AS A CHRONIC HEALTH PROBLEM

Those of us in the mental health field who work with individuals with chronic health problems are well aware of their susceptibility for developing secondary emotional problems. It does not really matter whether, for example, a child has asthma, a heart defect, or a neurological disorder such as epilepsy, to make him vulnerable in the development of an emotional problem. As that child grows and develops, his parents, by virtue of the affliction, need to pay special attention, become highly sensitive to the child's status or protective when necessary, take him to doctors' offices and hospitals depending upon the need. So we have a foundation on which it is very difficult for this type of child to feel "normal".

Many chronic health problems, including epilepsy, appear to have, and sometimes in reality do have, life-threatening characteristics. If adequate care or supervision is not given, death is a possibility. Therefore, parents become realistically concerned and a natural outgrowth of concern is oftentimes anxiety — a free-floating type of fear or a type of fear with impending doom quality. Children oftentimes resemble receiving sets. They are very sensitive to parental mood, frustrations, as well as anxiety, and they, in turn, react to parents' feelings with their own anxieties, frustrations, and moods. We all know that an asthmatic child in the throes of an attack, can have that attack exacerbated by a frank, strong, fearful emotion. The condition worsens, the fear mounts, and the situation spirals. In those children afflicted by epilepsy, many are not aware of the condition because of the very nature of the process itself which short-circuits conscious awareness. For example, children of school age,

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when questioned about their "seizures" frequently are not able to respond to questioning because of their lack of awareness, particularly those with petit mal or grand mal types of seizures. Only through gradual feedback from their family, their doctors, their peers, do they gain in some kind of awareness.

> Brian is an 11-year-old patient with petit mal epilepsy, who frequently "lost touch" with happenings, both at home and at school. As expected, his grades were variable depending upon the attention demand. For several years, his peers poked fun and generally made his life miserable at school because he appeared to be "out of it." Prior to coming for evaluation and treatment, his parents were very concerned because of his withdrawal at school and at home and irritability. He "escaped" conflict at school by running to the library at recess or lunch time. He waited after school so as to further avoid possible conflict going home.
>
> Treatment was designed to help him better understand the nature of his attention disruption and to develop compensatory mechanisms. Further, self-esteem and confidence building were an integral part. When he could tolerate it, he was placed in a small boys' group in which some of his social skills could be enhanced. It was interesting to observe initially, that in spite of his unhappiness at being lonely and isolated, he used many alienating techniques with the other boys which was pointed out in a positively critical fashion. Reports from home and school indicate that he is making a better adjustment.

THE UNIQUE ASPECTS OF EPILEPSY FROM A PSYCHOLOGICAL STANDPOINT

Because many epileptics are unaware or have a warning and then lack control over the process with which they are afflicted, they become all the more anxious, concerned, and oftentimes disturbed. It is a very frightening sensation to realize that you do not have control over yourself, or your brain function or your body function. An individual in a seizure has usually zero control. Afterwards, besides having whatever physiological repercussions which may ensue, such as the postictal state, headache and drowsiness, the patient may also suffer further by an emotion known as embarrassment because of his lack of control and lack of awareness of what happened.

Lack of control has other serious repercussions for epileptics. We all know the terrible conflicts that epileptics face in the job market. They have learned through harsh reality that truthful, objective completion of job applications has led to no job possibilities in the past. Employers are fearful of hiring someone who is not in command of himself at all times. Only through public education through the medical profession and through organizations such as CARES and Epihab, have employers become more enlightened and discriminating in their hiring practices.

Epileptics are frequently deprived and denied their right to drive an automobile, which may well be essential for their own safety and that of others. In a community such as Phoenix where mass transit leaves much to be desired, this can become a real problem and further alienates him from the mainstream. One of the most heartbreaking experiences for the therapist has been to hear the complaints, recriminations, and other expressions of frustration as well as hopefulness and, at times, naivete as a 16 to 18-year-old teenager expresses himself in relation to his need to drive. After all, driving is one of the real as well as symbolic ways an individual has in reaching independence.

> 17-year-old Jim, who had grand mal seizures, was angry! He became almost obsessed with his concern about what he saw as an extreme injustice due to his 16-year-old younger brother being able to drive and being continually put off by his parents and his physician. His anger was expressed in impulsive rages, occasional milder temper outbursts, and passive aggressiveness. Therapy for him was designed to assist him in learning more productive ways of expressing underlying feelings. With encouragement and support, he became actively involved in an athletic program at school despite many doubts and fears on his part. This provided a ready-made group for him in which to

> participate and took some of the pressure off the need to drive because many of his peers invited him to accompany them on social outings.
>
> Interestingly, the frequency of his seizures decreased. This may be related to the channeling of strong emotions into avenues which did not pressure or trigger seizure activity. In any event, Jim met the required criteria for obtaining a driver's permit and now feels that he is in the mainstream.

Independence is sometimes very difficult to achieve for an epileptic patient. Many require some form or degree of supervision. When independence is not achievable, particularly during the late teenage period, a type of hostile dependency on parent or parent figure often ensues. This is a sticky, conflicting proposition oftentimes fraught with a great deal of anger and ambivalence. The afflicted individual tends to take out his feelings on a parent. The ego is not able to fully recognize and accept this affliction as his own, but projects responsibility onto a parent in the form of blame, argument, and general dissension.

> Karen is a 19-year-old girl who not only has seizures (which are generally under control), but has the added burden of being minimally brain damaged to the extent that it leaves her poorly integrated. That is, the various facets of her do not function smoothly together. She has very poor judgment, is immature for her age, tends to be impulsive and reactive, as well as careless. In her large family, she stands out as the black sheep. She is quick to anger, tends to alienate most members of the family and has a particularly ambivalent relationship with her mother. Mother has the major share of responsibility for managing and disciplining her. The mother constantly feels like a failure and her daughter is a daily reminder of this.
>
> Karen had been involved in psychotherapy early in her life when her problems were acute at the grade school level. At this particular time, therapy was designed both on a relationship-building type basis as well as behavior modification. Her parents were finally able to decide on what kind of criteria she would have to achieve in order to achieve plus marks on a daily schedule divided into morning, afternoon and evening segments. Essentially, what we were doing was paying attention to the things that she did right, her cooperative behavior, and avoid paying attention to and reinforcing her negative behavior. This was an attempt to break up the hideous negative spiral in which this girl had been involved for several years. In effect, this was the last ditch stand prior to having her move into a supervised girls' residence.
>
> Gradually, Karen has been able to become more aware of her own behavior and the effect it has on the family. She tries diligently to become better organized, makes lists so she will not forget, and takes the reduced criticism more in stride. She has a long ways to go but she and her family have demonstrated that maladaptive patterns can be changed.

IDENTITY AND THE EPILEPTIC

As we develop, we all form a concept of ourselves which is based on several factors: they are reality; our physical appearance which we can observe; our various strengths and weaknesses of which we are aware, and our feelings about ourselves; which, to a large extent, are determined in a form of feedback from families, peer groups, adults, and even strangers. A person with a chronic health problem such as an epileptic takes on that affliction as part of his concept of himself as a person. Psychologically, we want that to be part of him, but we want it to be in porper perspective — in tune with reality. We do not want him to deny his affliction so as to potentially place himself in jeopardy from a health standpoint, nor do we want the affliction to become paramount and overpowering to the point he does not see himself as accurately as others might. Every one of us, after all, has one kind of problem, and most likely more than one. If it is not a health problem, it may be a psychological problem or constitutional problem, a marital problem, a weight problem, an economic problem, a social problem, etc. When our attention to these problems and concern about them overreach the position they should play in reality, they become neurotic. Neurotic individuals not only worry and concern themselves, but they tend to alienate themselves from others. They have difficulty in finding friends because they complain about their symptomatology, or they have such restricted interests that others find it difficult to communicate with them. This, then, becomes a form of self-alienation.

Perhaps one of the most tragic examples of the effect of a trauma on an individual in a family as far as her identity was concerned, occurred to a teenage girl when she was 13 years of age. A cerebral aneurysm burst, causing considerable brain damage, left-sided paralysis, speech impairment and lowered intellectual efficiency. Lynette and her identical twin were very bright girls, participated in school activities, played piano duets, and were generally very popular.

Lynette seemed to reach a plateau in her rehabilitation beyond which she could not progress. It was at this point that she was referred for therapy. She was very depressed, weepy, and irritable. She experienced seizures which were not fully under control. They frightened and alarmed her, causing tremendous embarrassment at school and, at one point, she came close to dropping out. Goals for individual therapy included gaining back some shattered self-confidence, helping her with study patterns so as to facilitate her adjustment at school and encouraging her to participate in some activities gradually. As she began to grab hold of the therapeutic relationship, she responded very well to the point that she was keeping a diary and allowing me to read her innermost thoughts and feelings which she experienced during the ensuing weeks. After a while, it became easier for her to talk about them directly rather than having to have them put in writing.

She was eventually placed in a small group with some other teenagers and gained further support and encouragement. She seemed to be making a better adjustment scholastically as well as interpersonally. The last I had heard, she had graduated from high school and was going on to junior college.

DEPENDENCY DANGERS

One of the unfortunate byproducts which sometimes develops in individuals who have chronic health problems is their tendency to use the disorder to meet infantile dependency needs. This oftentimes sets up a tremendously hostile dependent type of relationship between the patient and a spouse, parent, or sibling.

In the case of 23-year-old Gloria, who is married and has no children, she displayed very strong unmet dependency needs in her relationship with her husband.

Her seizure pattern was one of clusters, during the hypnagogic state, during that twilight period just as she was going off to sleep at night. Oftentimes, she would thrash about, falling out of bed and her husband would have to lift her up, place her back on the bed and care for her. After a while, he began to resent her seizures and their relationship became strained. In this instance, both of them were seen individually and the dynamics of their relationship explored in detail. As he grew more mature in terms of meeting her needs in a normal, productive way, her need to use her epilepsy in a controlling, neurotic fashion eased up. She has been able to grow, becoming more independent, developing some interests and activities aside from those that she and her husband enjoy together. Her seizures have become less severe, less frequent, and fewer in a cluster.

THE NEED FOR MEDICAL AND PSYCHOLOGICAL CHECKUPS

It is sometimes surprising to me to find epileptic patients who do not care for themselves well. And yet, why should it be surprising when many patients are self-defeating or even potentially self-destructive. The fact that some notice that they are having increasing numbers of seizures and have not contacted their physician regarding a reappraisal of their medication seems appalling, yet seems to happen all too frequently. There are obviously many reasons for a patient taking this position. Nevertheless, his well-being depends upon periodic checkups. If seizures can be controlled optimally by medication, his chances of leading a normal life are certainly enhanced tremendously. By the same token, many epileptics slip into periodic depressions, develop feelings of inadequacy, become embittered and hostile and socially alienated. Individual therapy or counseling as well as group therapy, provide an opportunity to enhance the feeling of well-being and to rebuild shattered egos. No one functions well if he does not feel all right about himself.

THE NEED FOR CONTINUING SOCIAL AND INTELLECTUAL GROWTH

I have been able to observe first hand the benefits that a group such as CARES can provide for epileptics. Here is a forum in which those afflicted can share their feelings and frustrations and obtain mutual support. It is an opportunity to meet socially, to get out of a rut and to be with those who can understand and empathize the best. At the same time, a group such as this provides intellectual stimulation in the form of educational talks and other such opportunities.

An epileptic patient should not feel that CARES is his only social outlet. The patient, himself, establishes the limits. There is no reason why he cannot become involved in other community activities. Moving away from his own problems and understanding those of others is oftentimes a very growth-producing and enriching experience. Being a volunteer one night per week for those less advantaged can be helpful. Participating in service organizations, taking extension courses, opening educational doors and windows is truly enriching.

> Mary is an attractive, 23-year-old mathematician working as a consultant out of New York for a large electronics firm. She had epilepsy since her early teenage years and was somewhat apprehensive about "sticking her neck out" socially and even in trying to learn how to drive. In New York, where she was previously employed, transportation was no problem because of the elaborate mass transit program there. However, in Phoenix, she soon found that she could not get about as well and would either have to stay home for long periods of time or be dependent upon her friends.
>
> She soon found herself in a very unhappy rut in which she went to work, fulfilled her responsibilities and returned home day after day. The apartment complex in which she lived housed mostly individuals older than herself. Her experiences with men to this point, had invariably been with very inadequate, passive souls who were essentially "safe".
>
> Therapeutic goals included the need for her to expand her social environment, (including a move to an apartment complex where there were younger people) and involvement in social and intellectual processes. She eventually made contact with a volunteer services unit and accepted a one-night-per-week placement at a hospital during which she pushed around a cart from the gift shop to the patients' rooms. It was during this experience that she met one of the medical residents and through him was introduced to a social group. She also signed up for a photography course at a junior college and, again, had an opportunity to meet with students outside the classroom.
>
> One of the most difficult things for a patient to do is to take that added extra step out of his rut in order to bring about changes in his life style. Once that step is taken, oftentimes very significant changes take place as they did with Mary. As she worked her way out of her depression, and developed more positive feelings about herself, she began to associate with men who had more confidence and generally more going for them so that is was possible for her to develop more mature relationships.

Those of us in the helping professions need to evaluate our own sensitivity and empathetic ability in order to truly understand the plight of those with chronic disabilities such as epilepsy. We can be of the most help by being supportive and encouraging and assisting in the establishment of healthier self-concepts through good feedback. We all need to perform an exercise which I call "inventorying assets" when we feel down and less fortunate than others. In other words, count your blessings and help others to do the same.

MEDICAL MALPRACTICE INSURANCE PROBLEMS

The Board of Trustees of the AMA, including Dr. Dan Cloud of Arizona, delineated the "most critical issue facing American physicians and their patients" to be the deterioration of the medical liability situation.

The joint socio-economic committee of the American Association of Neurological Surgeons and the Congress of Neurological Surgeons has recently convened a meeting of representatives from so-called crisis states (New York, California, Michigan, Massachusetts, Maryland, Florida, North Carolina, Texas, and Indiana) to exert leadership in solutions to the crisis in medical liability coverage.

A special section of the Arizona Medical Association's Legislative Committee is preparing suggested legislation speaking to the medical malpractice problem.

The President of the Arizona State Trial Lawyers Association is formulating a subcommittee to seek to work with interested physicians to try to propose legislation that will keep medical insurance premiums in accord with actual risks and losses incurred in the State of Arizona.

Legislative leaders such as Majority Leader Burton Barr and Richard O. Flynn, M.D., are actively working for potential legislative solutions in Arizona.

Five recommendations to ameliorate the rising costs of medical malpractice claims have recently been submitted by the Signal-Imperial Insurance Group, one of the few remaining carriers in this field.

The groups and individuals cited above are indicative of the ground swell of efforts that will push for solutions to medical malpractice insurance problems in the United States, including Arizona. Some of the thinking that has developed so far is presented in this issue and will be continued in the future as events unfold. It is quite certain that the solutions to these problems must come soon if private and public institutional practice of medicine are to continue to serve the people of our country in the best possible manner.

John R. Green, M.D.

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MEDICAL MALPRACTICE INSURANCE SECTION
THE SIGNAL-IMPERIAL INSURANCE GROUP
Los Angeles, California

I. Five Recommendations to Ameliorate the Rising Costs of Medical Malpractice Claims

(Presented to the Dade County Medical Society, January 21, 1975 and to the Maricopa County Medical Society by Irl Sell, M.D. on February 2, 1975.)

Recent developments in the loss experience in professional liability concerning the coverages afforded medical doctors in the United States has resulted in insurors sustaining significant underwriting losses from the class, and consequently either withdrawing from this line of business, or in the alternative, to sharply reprice their product upward in order to continue.

The most obvious consequence of these actions by a variety of insurers is to drastically reduce the availability of coverage for medical doctors, or as is the case here in Dade County, to advance rates with a rapidity which alarms and upsets the medical profession. It appears that the basic underlying fear and concern among medical doctors is first, "How high is up?" In other words, is there any sensible ceiling on malpractice rates, and second, "Will there in the future be any insurers in this market at all?"

It is in answer to those two fundamental questions that the Signal-Imperial Insurance Group offers a set of recommendations containing five specific items, which if promptly brought into being as a group, would in our opinion, initiate the process of ameliorating the current crisis and create a climate wherein availability of coverage at stable rates would rapidly emerge.

The first recommendation is the immediate adoption of the so-called "New Jersey Rule" governing contingent fees charged by plaintiffs attorneys. The Signal-Imperial Group has run a statistical analysis of this problem and the results and conclusions inferred therefrom clearly illustrate the need for this change. Additionally, our study measured the impact on the level of total malpractice claims costs and the consequent impact on plaintiffs attorneys.

We qualified the study by using 565 closed claims covering the interval from 1/1/70 through 12/31/74 from four state, California, Arizona, Nevada and Florida. The initial finding, after breaking out the plaintiffs attorneys' fees and the defense attorneys' fees from the total loss cost, was to compare these two items by themselves. We found that the amount in aggregate paid to plaintiffs attorneys was five times the amount paid to defense attorneys. Further, that more than one-half of the aggregate amount of dollars paid to plaintiffs attorneys involved less than 2% of the total claims involved in the study. Further, by far the most interesting and significant finding arising from the comparison was that more than 50% of the aggregate dollars paid to plaintiffs attorneys which involved less than 2% of the total claims went, in their entirety, to less than six lawyers. In other words, approximately six lawyers collected more than 50% of the total aggregate plaintiffs contingent fees while several hundred other plaintiffs attorneys collected in aggregate less than 50% of the total plaintiffs legal fees. This obvious disparity is striking.

An additional finding of significance was that after applying the "New Jersey Rule" to the claimants amounts paid, the vast majority of the plaintiff attorneys involved in 98% of the closed claims would in aggregate have received more dollars than they actually in fact did receive. The entire impact of the adjustment downward fell on the 2% balance involving approximately six attorneys. The two inescapable conclusions from the foregoing are first, that in excess of 50% of all plaintiffs contingent fees, under the present system, are collected by only a handful of attorneys in the four states studied, while scores of other plaintiffs attorneys receive the "short end of the stick". Second, adoption of the "New Jersey Rule" would reduce total loss costs for malpractice claims for doctors by perhaps as much as 20%. One final observation regarding plaintiffs attorneys fees. Under the current system, in aggregate they are in excess of five times the defense fees. If the "New Jersey Rule" was applicable, plaintiff attorneys would still aggregate in excess of twice the amount aggregated in defense fees.

The second major recommendation is the enactment of a statute which would legally create the ability for an insuror to effect "structured" settlements for those cases in which everyone's best interests would be served. To illustrate this point an example drawn from reality will suffice. Due to an error during surgery, a patient approximately aged 25 suffered severe brain damage and as a consequence required lifetime insitutional care. In the negotiations for settlement, the annualized cost of institutional care, together with estimates of potential earnings was applied to an estimate life expectancy. The resulting sum was used as a basis for complete settlement and formed by far the largest single component in the total amount which included general damages and potential wrongful death liability among other items. The full amount was agreed upon and consequently paid in a lump sum. Within 24 months the claimant died and the claimant's heirs thereby became instant millionaires.

From a social policy standpoint it hardly makes sense not to change the current situation in order to achieve the obviously desirable goal of satisfactorily providing for the longterm needs of a claimant inadvertently severly injured while at the same time to do so on a sensible cost basis which would avoid the creation of a windfall enrichment to heirs or others on a basis not contemplated nor provided for in the original settlement agreement.

The quantified estimated savings resulting from this recommendation alone may well lower current total loss costs approximately 13 to 18%.

The third recommendation is to enact a law permitting the introduction into evidence of collateral benefit payments as a reduction against a proposed verdict amount. Currently collateral source benefits are barred, which results in frequent situations in which the claimant can in fact collect more than once for the same cost. For example, an injured claimant may introduce into evidence expense "billings" totaling $15,000.00 as out of pocket costs in order to help substantiate the value of his claim. What cannot be introduced, however, is the fact that such "billings" may have actually not been paid by the claimant at all. Rather they were actually paid by the claimants' group medical plan, or some other similar outside source. The same is true of alleged "loss of wages". In such instances the wage loss is computed on a gross basis rather than take home pay without regard to normal deductions, such as income taxes. A change in the law permitting the introduction of so-called "collateral source" benefits, would significantly reduce the average cost of claims.

The fourth recommendation concerns the ambiguities and resultant problems surrounding informed consent. In the California case of Cobbs vs. Grant, the California Supreme Court attempted to state a standard, or bench mark with respect to informed consent by referring to . . . "what would a prudent person in the patient's position have decided if adequately informed of all significant perils." The practical problem arises when attempting to satisfactorily define what is adequate and what is significant. The definitions are unfortunately subject to such a wide latitude of subjective interpretation as to place medical doctors on a working day to day basis in the position of becoming subject to subsequent "second guessing" by a jury regardless of any elaborate precautions they may utilize at the particular time and circumstance to attempt to properly satisfy the requirements of informed consent. Obviously, this gives rise to an endless string of possible grounds for malpractice suits, even in circumstances where it is clear and certain that no negligent act in fact occurred. It is simply alleged that the patient was not informed of all the possible consequences and the claimant can get into court. We recommend that a properly drafted consent form setting forth reasonable, logical and adequate advice as to the risks, be enacted in statute form and that if there is no showing of mistake of fact or fraud, it is to be presumed that adequate consent has been obtained.

This would then clearly place the burden of proof upon the claimant who asserts lack of informed consent rather than as in the current situation, an item to be resolved in court. The practical result would be a significant reduction in lawsuits, particularly those wherein the sole or primary issue to be resolved is informed consent, no negligence per se being shown.

The fifth and final recommendation involves the judicial instructions surrounding "res ipsa loquitur" and "conditional res ipsa loquitur". In many instances cases are filed and go to a jury not on the merits of the case, not on the factual question of whether there was or was not malpractice, but rather simply because of the burden of proof placed on the defendant doctor to prove or explain away something which is incapable of exact explanation due to the fact that medicine and the practice of medicine is not an exact science. In other words, the instruction shifts the burden of proof from the plaintiff to the defendant doctor to prove or establish the negative — i.e. — to prove or establish beyond a reasonable doubt that no malpractice did in fact occur. We recommend that a statute be enacted that would ensure that the burden of proof remains with the plaintiff, as the history and tradition of our system of jurisprudence suggests, and would result in the arresting, or curbing of the tendency toward shifting the burden of proof to the defendant. The practical impact of such a statute would be a reduction in suits, especially those whose sole or primary value lies not in their merits, nor the question of fact regarding an act of malpractice, but rather on whether an instruction can be obtained which shifts the burden to the defendant to prove or establish the negative — i.e. — no malpractice.

The foregoing five recommendations, if brought into being as a package, will in a reaonable time, begin to stabilize both rates and market availability. There exists the possibility that if other factors were to remain static, that rates would then begin to drift downward. Some rate reductions are a realistic expectation within a reasonable time after enactment of the recommended five-point package.

The Signal-Imperial Group recognizes that a variety of other segments of our society have made recommendations other than, or beyond the ones contained here. For a variety of reasons we either do not share the conclusions of their sponsors that they will in fact achieve the desired or contemplated results, or in some cases, that the recommendations are socially or politically acceptable.

In the event that our recommended package is not brought into being, it is our considered judgment that rates will continue to escalate, market availability will continue to shrink and that at some point in the not too distant future the Government will be compelled to occupy the entire field of health care and to change the system of redress of patient grievances in a very fundamental way. The developing economics inherent in the existing total arrangements preclude any other conclusion.

Finally, I would like to address one comment to our friends in the legal profession, who I understand are not presented here tonight. We recommend that they consider thoughtfully the package here presented and consider carefully their reactions to it. We sincerly believe that the hour is late and the situation is extremely critical. If the legal profession fails to support in a responsible and sensible fashion an effort to enact these recommendations immediately, on the grounds that they are giving up a piece of the pie and that the basic reforms lie wholly within the medical profession, we can only express our grave concern that there will in fact be no pie for anyone — doctors, patients, lawyers, no-one. In short, the game will be over.

The interested and affected groups within our society, including patients, admittedly with diverse needs and conflicting legitimate claims in a pluralistic society will all lose and society in general will be the poorer for it.

II. Letter to William G. Payne, M.D., President of the Arizona Medical Association and David Pent, M.D., President of the Maricopa County Medical Society from James J. Leonard, Chairman of the Subcommittee on Medical Malpractice Insurance Problems of the Arizona State Trial Lawyers Association.

"Gentlemen:

RE: Medical Malpractice Insurance Problems

"While I have not had the pleasure of meeting many of you gentlemen personally, I believe we share a common and pressing problem which is deserving of our coordinated efforts and best thinking. It is no secret amongst men who work in the plaintiffs' personal injury field, of whom I am one, that doctors are extremely upset with regard to the present suggestions that insurance companies are making concerning the rate increases projected for the coming years.

"The President of the Arizona State Trial Lawyers Association has asked me to chair a subcommittee and seek to work with interested physicians to try and propose legislation that will keep medical negligence insurance premiums in accord with the actual risks and losses incurred in the State of Arizona.

"For example, I would propose that we meet to discuss the possibility of obtaining legislation requiring all or most of the companies who are selling other types of insurance in the State of Arizona to participate in the offering of coverage in the malpractice field.

"You are probably aware of the fact that there is presently no legislation which in any way regulates the fees which may be charged in Arizona for malpractice insurance. Further, we have no legislation requiring insurance carriers in this field to prepare and make available to interested parties a disclosure of their loss ratios as compared to the monies earned by them on premiums collected. In summary, the carriers refuse to divulge the bases upon which their claimed needs for increased premiums rest. Thus, there is no way that any individual, or any governing body, can learn whether premiums being charged are fair or unfair. In other areas of insurance, companies are required to keep such statistics and they are made available to insurance commissioners whenever rate increases are sought.

"It is our opinion that rates in Arizona do not reflect the actual experience of the companies within this state. We believe doctors specifically and the public generally are entitled to have this type of insurance regulated in the same way that other types of insurance are. We believe doctors should be freed from the fear that the few companies who write insurance in their area will stop writing it if they are regulated and that there will then be no coverage available.

"We know of no constitutional bar to legislation which would require all companies who sell other types of insurance in this state to participate in the malpractice field; nor do we know of any prohibition to a more restricted piece of legislation which would require such insurance to be written only by those carriers who seek a substantial quantity of coverage in other fields within this state.

"We have never been impressed by the argument that this field requires some particular type of expertise and, therefore, only a few companies can write it. There is no reason why the coverage cannot be written by many companies, even if the actual investigation and processing of claims is handled by a more limited group of people who are very experienced in such work.

"Perhaps, next to doctors themselves, no group has greater interest than we do in assuring doctors of the availability of adequate coverage at reasonable rates. We share with you a desire to see to it that protection to unfortunate patients who receive inadequate care is provided in the least expensive, least burdensome way possible.

"We are seeking a common meeting ground with physicians, rather than simply trying to battle out the question of whether medical negligence cases should be eliminated altogether. Every doctor with whom I have ever talked who has retained a moderate view on this question, has not been in favor of abolishing medical negligence suits in entirety, and feels that this would constitute special legislation which would be unconstitutional, and morally improper.

"I would be most appreciative if Dr. Payne and/or Dr. Pent would get in touch with me at your earliest convenience, and we could perhaps appoint three-or-four-man committees to jointly meet and seek meetings with appropriate legislators to seek meaningful legislation in this field. May I please hear from you at your convenience. We are most interested in working with you to try and aid in the problem presented."

III. The Board of Trustees of the American Medical Association recommend that state medical societies, with counsel and support from the AMA take these actions:

"1. Establish, through the state insurance commissioner, risk pooling mechanisms which would give existing medical liability carriers an opportunity to agree voluntarily to form a joint underwriting association to cover all physicians on an assigned pro-rata basis until a permanent solution is found. In states where there no longer is a medical liability carrier, all general or casualty liability insurance carriers would be assigned to write primary professional liability coverage and reinsure through a reinsurance exchange.

"2. Seek legislative remedies in each state in the following areas: Limiting or eliminating pain and suffering and punitive damages as an item for monetary damages; excluding duplication of payments made to claimants; establishing funds to handle future expenses of claimants to eliminate windfall recoveries; placing a ceiling on damages; rectifying statutes of limitations; establishing a sliding scale for contingency fees; eliminating the ad damnum clause in lawsuits; limiting guaranty of medical results to assurances expressly set forth in writing; eliminating injury alone as a basis of negligence (res ipsa loquitur); ruling oral statements not admissible to qualify the terms of written informed consent; permiting the provider of medical care to file a counterclaim for abuse of process before a personal injury action has been terminated.

"3. Reach a long-range solution in which each state medical association, in cooperation with the AMA and other groups, work through the appropriate state or legislative process to create a workmen's compensation-type program (a Medical Injury Compensation Commission)."

Dean's Page

ANATOMY AT ARIZONA MEDICAL CENTER

NEAL A. VANSELOW, M.D.

In the recent past, anatomists were often considered anachronisms — "old fogeys who rattle bones." This image is sharpened by graduating physicians, who often see anatomists only in an occasional tutorial session over the cadaver, a slice of brain or a microscopic section of the liver. But actually, anatomists are as timely as astronomers — they scan "inner space," not with telescopes but with high-powered microscopes to unravel the mysteries of the cell. The selection of an anatomist, Dr. George E. Palade (Yale University) for one of the 1974 Nobel Prizes in Biology and Medicine, shows their due season.

At the Arizona Medical Center, faculty and graduate student anatomists teach in the College of Medicine, where Phase I medical students must take modern introductory courses in gross and microscopic human anatomy presented by the Department of Anatomy and a third course, neurosciences, offered jointly by the Departments of Anatomy and Physiology. In addition, a variety of research projects are being carried out, for the most part out of sight from the student physician.

Two AMC anatomists study embryonic nerve cells — cells very different from those in the adult brain — to gain a better understanding of how the brain develops.

Dr. Jay Angevine exploits a radioactive tracer technique to determine the birthplaces of brain cells, which in the adult brain often lie far from their sites of origin. The method is reminiscent, he says, of bird-banding, long used by ornithologists to study complex patterns of nesting and migration. Differentiation of embryonic neurons is another concern: "When can you point to a cell and say that it's going to be a particular kind of neuron? Until recently, most workers in our field have not seen microscopically recognizable evidence of career choices in young nerve cells before their adolescence, so to speak, although we know decisions are reached much earlier as far as genetic instructions are concerned."

In regard to this question, Dr. John Sechrist has discovered specialized changes in very young nerve cells ("infants") — and, in fact, even in their still-multiplying antecedents. To see these changes, he uses one of the department's electron miscroscopes, which magnifies up to 50,000 times. He feels that some of these parental cells already signify what kind of offspring they will produce.

Such basic research upon the "blueprints" of brain development in laboratory animals is valuable to clinicians, who can better understand disordered brain development and more effectively search for preventive or ameliorative measures.

Other AMC anatomists pursue important questions pertaining to brain function or body development in general. Dr. William Barber records unit responses of neurons in the brain stem which control respiration. He is interested in the effect that various lung inflation techniques, now employed clinically, have upon these neurons. Animal studies provide this information.

Dr. Bryant Benson, recently appointed department head, studies mechanisms through which certain brain areas regulate the reproductive system. He recently received a $105,000 grant from the NIH for his research on the pineal body, long thought to be nonfunctional. He is attempting to identify the pineal cells which secrete hormones that stimulate or inhibit reproductive processes and to chemically characterize the secretory products. His research combines radioimmunoassay, bioassay and biochemical techniques, as well as ultrastructural analysis; he hopes to acquire a new scanning electron microscope for the department in the near future.

How cells construct tissues and organs is the specialty of Dr. Edward Carlson, an electron microscopist with interests in connective tissues. Dr. Carlson explores the developmental role of collagen, an ubiquitous protein present in unusually great amounts in the embryo. Collagen may provide "railroad tracks" upon which cells migrate and are guided to destinations; it also seems to "instruct" cells as to future maturation. "Misguided" or "misinstructed" cells inevitably end up in inappropriate positions in the developing body, resulting in congenital malformations such as spina bifida and cleft palate. Clearly an understanding of the fundamental principles of cell migration may lead to a better knowledge of the causes of abnormal development and ultimately to its prevention.

Dr. Albert LeBouton focuses upon the normal and induced growth of the liver and the sites of plasma protein synthesis in the organ. He notes that liver cells differ in their ability to divide and that the cessation of liver cell mitosis after birth counters their recruitment into proliferation following partial hepatectomy, findings of fundamental interest in the pathogenesis of hepatomas and the restorative process after surgery or toxic insults to the liver. Dr. LeBouton also observes that liver cells do not synthesize protein equally, which helps to explain changes in the peripheral blood proteins during many disease states.

Contrary to superstition, anatomy is not a dead subject. Anatomical teaching and research at AMC reflects and reinforces current improvements in medical education and the latest advances in biomedical knowledge in the country.

Neal A. Vanselow

Obstetrics and Gynecology

"THE SCOPE"

WILLIAM RUSSELL, JR., M.D.
F.A.C.O.G.
A.S.C.C.C.

The above title is hopefully intended to get the attention of all physicians who do pap smears. Because the scope, known as the Colposcope, is a new entity in the armamentarium of the gynecologist. Any physician who does paps should know the significance of colposcopy and what can be done with the scope. The scope has, in the last ten years in this country, become so effective not only in the teaching centers but in the private gynecologists' offices, that there is no longer any excuse for the routine conization for abnormal pap smears. Neither is it necessary for all gynecologists to become expert colposcopists. But it is necessary for any and all physicians (Internists, General Practitioners, General Surgeons and Obstetricians-Gynecologists) who do pap smears to know where Colposcopy can be done and the benefits of such.

To go back historically a short period of time, in the late 20's, Doctor Hans Hinselman of Germany, felt that the cervix with magnification might show changes as magnification of other orifices of the human body had for other specialties. He, therefore, devised a Colposcope which, with scientific progress, has now become a binocular instrument with its own strobe unit and light, with magnification from ten to twenty-five times, whereby good visualization of the cervix is easily obtained and changes can be observed. Doctor Hinselman, at that time, was interested in leukoplakia and was not aware of the magnitude of what he was beginning in his search for enlightenment about changes in the cervix. The scope was widely used and enthusiastically received in Europe, and was used in state clinics and private practice. However, because of the language barrier, lack of specific literature, and the distance between Europe and this country, the scope actually fell into a period of disrepute in the U.S.A. However, in 1964, Colposcopy began to be used extensively in this country, and especially with the advent of published works beginning with monographs by Dr. Karl Bolton and Dr. Joseph Scott, and later by

Dr. Townsend and Dr. Ostegard. The first "bible", however, was "Colposcopy", published in 1971 by three Australian doctors; Dr. Coppleson, Pixley and Reed. It was edited by an American, Dr. Layman Gray of the University of Louisville, one of the Deans of Gynecology in the United States. This was followed by the textbook by Dr. Koldstat and Stafl in 1972, called the "Atlas of Colposcopy". These were the two primary books for teaching and for spreading the knowledge of Colposcopy.

For years it has been a known fact in gynecology that the pap smears are about 85% accurate; however, the use of the combined pap and Colposcope has now increased the accuracy of finding a cervical lesion to 98-99%. This is a tremendous change in progress so far as helping to find and eliminate early lesions, which with their progression, has led to carcinoma of the cervix becoming one of the killers of the century. The pap smear, as we all remember, does not pinpoint "where", it merely says that "somewhere" there is an abnormality, and with the random biopsy of the multiple punch, the biopsies can miss, and have missed, cancer areas because they were done at random. Primary ability of the scope is that it can so perfectly locate, or that the physician with the scope can perfectly locate, an abnormality in the cervix, the vagina or vulva; that these lesions can often be removed by excision in the office or by utilization of heat or freezing techniques. The scope itself, at the present time, is used for looking at patients with (1) any abnormal pap smear, (2) any cervix that appears abnormal to the naked eye, or (3) to look at as many patients as can possibly be done in the office or clinic. To the practitioner who says, "Well, we are still using the pap smear, so what is the purpose of the scope?", the answer is to increase our accuracy from 85% to 98-99%.

The scope allows the colposcopist in two or three minutes to examine the vulva, the vagina and cervix; and especially the transformation zone of the cervix where 99% of the dysplasia occurs. Furthermore, the scope eliminates 95% of the cold conizations of the cervix, with the associated expensive hospitalizations and general anesthesia. Furthermore, conization itself is not necessarily a minor procedure. Another purpose of the scope is that of visualization of the cervix prior to surgery to determine how much vaginal cuff needs to be removed along with the uterus, if dysplasia or carcinoma-in-situ is present on the cervix.

The Colopscope has also proven that some of the old ideas about the cervix have been erroneous, especially regarding the use of creams, suppositories, jellies and douches for what we thought was chronic cervicitis, etc. Now in retrospect and looking with the scope, we find that often this is either normal columnar epithelium or squamous metaplasia of the cervix, healing itself. We feel, of course, that cryosurgery *in association* with the scope provides an invaluable tool in the armamentarium.

In the last two or three years, a new dimension has been added to the field of Colposcopy. Diethylstilbesterol is a drug which was prescribed during the 1950's by physicians for patients in the first trimester of pregnancy who were threatening to abort, and for patients who had a history of previous abortions. Some of the female offspring of those pregnancies developed a clear cell carcinoma of the vagina and cervix. The symptomatology was often slight bleeding, rarely any discomfort, and rarely any other symptomatology. The pap smears are usually reported as negative and so the scope becomes extremely important in evaluating and diagnosing the genital tract of these young girls.

In Arizona there are several clinics with colposcopic exams available. They are located at St. Joseph's Hospital, the Maricopa County Hospital, Good Samaritan Hospital, the Arizona Medical Center, and the State Health Department. In addition, many gynecologists use a Colposcope in their office. In November, 1974, a Seminar of Intensive Colposcopy was conducted here in Phoenix by St. Joseph's Hospital. We were fortunate in having Doctors Coppleson, Pixley, Stafl, Scott and Townsend for didactic and clinical sessions, and it was an opportunity whereby gynecologists from Phoenix and around the country became better informed about Colposcopy.

We have really only touched the high points as to why physicians should be familiar with the scope and Colposcopy. Everyone should understand the *purpose* of it and how and where a colposcopic examination can be obtained. Gynecology has made a great stride with this instrument. The public is now becoming aware that something exists besides the pap smear and the day is coming when the patient may walk in and ask for a scope examination as well as a pap smear.

Clinical Oncology In Arizona

This new section in Arizona Medicine is specifically targeted to the subject of cancer care in the state of Arizona. Recognition of the importance of cancer management has been underscored by the establishment of the conquest of cancer as a national goal. In this column, current concepts in cancer management and recent advances in cancer research that are relevant to Arizona, will be discussed each month. Cancer therapy is currently changing at an extraordinarily rapid rate, and the views expressed on this page should not be considered as static recommendations. The editors of this column will select key topics and invite interested physicians and allied health professionals from Arizona to write components related to areas of their expertise in cancer.

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LUNG CANCER

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In 1972 there were 76,000 newly diagnosed cases of bronchogenic carcinoma and 70,000 deaths from this cancer in the United States.

The male to female ratio is 4.4:1.[1] These deaths represent an eighteen-fold increase in males over the last four decades with the female death rate rapidly increasing also. The median survival from diagnosis remains about six months and the five-year survival 5-10% despite all current forms of treatment. Several environmental factors have been recognized as carcinogens, including cigarette smoking, polluted air resulting from certain industrial fumes, as well as occupational exposure to radioactive materials, asbestos, metals and metallic ores.[2]

At this time, the major therapeutic modalities employed in the treatment of bronchogenic carcinoma are surgery, radiotherapy, and chemotherapy. It is not the purpose of this review to discuss the various techniques that are employed for the surgical resection of bronchogenic carcinoma and this will only receive brief comment. Mediastinoscopy, improved cytological methodology, bronchoscopy and arteriography have contributed to the advances in diagnosis and staging of this neoplasm.

An understanding of the pathogenesis of lung cancer is important since early diagnosis is an important factor in curative therapy. Pulmonary cancers produce symptoms and definitive localization only late in their natural course. Hence, they are virtually all diagnosed at a late, invasive stage. Lesions must be greater than 1 cm to be detected by conventional x-ray techniques. Even then, five-year survivals are limited to one-fifth of the 25% of the patients that are surgically resectable.

Clinical manifestations as well as prognosis are related to the histologic type of bronchogenic carcinoma. Epidermoid (squamous cell) carcinoma has a slow growth rate and metastasizes relatively late in the course of the disease. Conversely, small cell (oat cell) carcinoma is metastatic in at least 90% of cases at the time of diagnosis. Patients with epidermoid carcinoma may have symptoms for 6 months prior to diagnosis whereas a patient with small cell carcinoma is more likely to have been symptomatic for a few weeks.

MEDICAL ASPECTS. The major symptoms leading to diagnosis of bronchogenic carcinoma are persistent cough, hemoptysis, dypnea, chest pain, anorexia, hoarseness, dysphagia, stridor, weight loss, weakness and fatigue. Physical findings may be due to pneumonitis, atelectasis, pleural effusion, superior vena caval syndrome, paralysis of phrenic and laryngeal nerves, compression of the esophagus, nerve root involvement, destruction of rib and other skeletal

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structures, central nervous system involvement, fever, hepatomegaly, pericardial involvement with effusion and tamponade. Extra-pulmonary nonendocrine manifestations may be present, such as hypertrophic osteoarthropathy, myopathies and neuropathies.[3]

In addition, in recent years there has been accumulated a vast knowledge of hormones and other substances which are associated with bronchogenic carcinoma. This list includes parathyroid hormone (PTH), antidiuretic hormone (ADH), adrenocorticotrophic hormone (ACTH), melanocyte-stimulating hormone (MSH), human chorionic gonadotrophin (HCG), growth hormone (HGH), calcitonin, prolactin, placental lactogen (HPL), 5-Hydroxytryptophan, estradiol, insulin, glucagon, alpha fetoprotein, carcinoembryonic antigen, placental alkaline phosphatase and polyamines.[4]

Clinically, the more important ones are parathyroid hormone, antidiuretic hormone and adrenocorticotrophic hormone. When parathyroid hormone produces significant hypercalcemia, the resultant mental symptoms can suggest the possibility of brain metastases. Calcium must always be determined, for the hypercalcemia can be treated with mithramycin, steroids, hydration and diuretics. Antidiuretic hormone production may also result in significant hyponatremia with accompanying mental symptomatology. The patient will respond to fluid restriction and administration of saline, and this complication should not be confused with brain metastases.

The factors of importance in the prognosis of patients with bronchogenic carcinoma include histologic type, immune status of the patient, growth rate of the tumor, and the stage of the disease at the time of diagnosis.

The patient's immune status with respect to cell mediated immunity, or "T cell" function, is of considerable importance with regard to prognosis. Cell mediated immunity can be rather easily assessed by the application of a battery of standardized skin tests such as PPD (intermediate), coccidioidomycosis, mumps, candida, streptokinase-streptodornase, and dermatrophytin. Failure to manifest any degree of induration (hypersensititivity at 48 hours) to all of these tests implies a state of anergy, a condition often seen in patients with aggressive tumors. More sophisticated lymphocyte function studies are available in the research laboratory, but to date, probably do not contribute more to the clinical assessment than do the skin tests alone.

Another factor of recent interest and clinical significance at this time is the "growth fraction" of the tumor. This refers to the number of cells in active reproductive process at any given time. There is evidence that tumor cells that are active in the reproductive process are much more sensitive to cytotoxic chemotherapy or radiotherapy whereas cells that are in the resting stage are relatively inert to most therapeutic modalities. This has implications in selecting and timing therapy so that the greatest possible cell-kill is attained. The growth fraction may also be a determining factor in tumor behavior. A tumor with a high growth fraction usually grows rapidly, is more aggressive and disseminates more rapidly but also responds more readily to systemic chemotherapy. An example of this is in small cell carcinoma of the lung. On the other hand, epidermoid carcinomas have a low growth fraction, grow slowly, and are correspondingly less sensitive to chemotherapy or radiotherapy.

SURGERY TREATMENT

Surgery is the treatment of choice for resectable lung tumors. Although radiation can sterilize some primary tumors, the local control rate is better with surgery. Thus, surgery is favored when the extent of the tumor and condition of the patient permit. However, oat cell carcinoma is an exception to this general rule. Some surgeons no longer consider oat cell carcinoma a surgical lesion because of its tendency for early widespread dissemination.[5] Unfortunately, most lung cancers of all cell types are too advanced to be resected curatively when first seen. These patients have a very poor prognosis because of occult widespread disease which causes death even if the primary tumor is controlled.

RADIATION THERAPY

Pre-operative radiotherapy has been disappointing and largely abandoned. However, good results have been reported in selected patients with superior sulcus tumors.[6] Thus, the role of radiation is chiefly palliative in patients with inoperable lung cancer, even though a few patients (3-9%)[7] do survive 5 years after treatment with radiation. The goal of the radiation oncologist is to effectively palliate the majority of patients with minimum of morbidity, without sacrificing the chance for cure in the very few who can be cured with radiation alone. With this in mind, a split course of radiation is often used.[8] High dose radiation is indicated if the tumor can be encompassed in a radiation field of moderate size and the patient's general condition is good. In patients with severe obstructive lung disease, fields must be kept small to avoid making dyspnea worse. Two thousand rads is given in 5 treatments in 1 week's time. The patient is re-evaluated after a 3-week rest. If the disease is still localized, the same dose is repeated. The split course treatment plan is attractive because the acute side effects are minimal. Patients rarely experience a painful esophagitis which is seen in association with the continuous course of 5,000 rads in 5 weeks. The biological effect of the split course is probably similar to conventional 5-week treatment plans.[9] The rest between courses seems to improve tolerance of normal tissues. Such split courses can be used in conjunction with carefully timed chemotherapy. A combined modality approach of this type can maximally increase the chance that both the local disease and the usually present micrometastases are both treated simultaneously. Chemotherapy as discussed below is optimally used early in combination with radiotherapy.

If patients present with distant metastases or very advanced local disease which cannot be easily encompassed, radiation therapy should be reserved for symptomatic sites. Cough, superior vena caval obstruction, hemoptysis, and chest pain can be relieved in 50-75% of cases. Bone pain from metastasis can be relieved in the majority of cases. Bronchial obstruction with resultant atelectasis and secondary infection can be relieved in some cases. These palliative courses can usually be delivered in 1-3 weeks and should be designed to produce a minimum of side effects.

SYSTEMIC CHEMOTHERAPY

In general, the chemotherapy of bronchogenic carcinoma has yielded poor results thus far if compared to other more responsive solid tumors such as metastic breast carcinoma and lymphoma. When strict criteria are applied, such as 50% reduction in size of a measurable lesion, there are comparatively few drugs that can consistently be termed therapeutically useful. However, when these responses occur, prolongation of life is possible, although it may be measured only in terms of months. In addition, relief of distressing symptoms and palliation may be achieved.

In general, multiple drug regimens are giving higher response rates than single agents in the treatment of small cell carcinoma at this time. The use of a multiple drug regimen dictates that component single agents themselves have activity in the particular histologic type of bronchogenic carcinoma that is being treated and that the combined activity of the drugs, when given simultaneously, be greater than that when each drug is used sequentially.

There are drugs available for the National Institutes of Health that are promising, both singly and in combination, and are under continuous clinical investigation at this time. These drugs are ifosfamide, BCNU, CCNU, methyl CCNU, hexamethylmelamine and 1-methyl 1-nitrosurea. These drugs, although promising for possible future treatment, are available only on a protocol basis and are not available for general use. The following regimens consist of drugs which are in general use at this time and can be used to initiate therapy by practitioners in many locations and perhaps lacking specialized facilities. There may be other regimens with significant activity that are preferred for personal reasons by other practitioners and that are acceptable.

Because of the general poor response of bronchogenic carcinoma to all modalities of therapy, including chemotherapy, a dogmatic dictum in this realm would be inappropriate, and new investigative programs could rapidly replace current approaches.

With respect to epidermoid or squamous cell carcinoma, nitrogen mustard gives a response rate of 36% when used singly. It is carefully administered intravenously every 3-4 weeks. If nitrogen mustard cannot be tolerated, then cyclophosphamide (Cytoxan®) 1.0 gm per square meter can be given intravenously every three weeks with a response rate of about 20%.[10]

In small cell carcinoma, since widespread metastases are usually present at the time of diagnosis, combination chemotherapy is indicated in conjunction with radiotherapy. One satisfactory drug regiment consists of procarbazine, 80 mg per square meter, daily, p.o., with cyclophosphamide, 80 mg per square meter, daily, p.o. concomittantly, given weekly, are methotrexate, 25 mg per square meter, intravenously, and vincristine, 1.2 mg per square meter, intravenously. This regimen is continued for four weeks and the cycle can then be repeated if a tumor response is obtained. The white blood count should be checked weekly and the entire regimen interrupted if the white count is below 4,000. This regimen has a reported response rate of 60%.[11]

Chemotherapeutic regimens for other cell types are far less certain. Adenocarcinomas occasionally respond to alkylating agents such as cytoxan or melphalan, whereas large cell carcinomas may respond to procarbazine.

Every effort should be made to treat the patient on an out-patient basis. These single agent and combination regimens are suitable for out-patient care.

RESEARCH CHEMOIMMUNOTHERAPY FOR LUNG CANCER

Currently, the University of Arizona is employing a pulse combination of adriamycin and cytoxan given every 21-28 days. Adriamycin is given in a dose of 40 mg per square meter on day 1 and cytoxan in a dose of 200 mg per square meter on days 3-6 (4 days). This combination has been effective in several forms of cancer and warrants a trial in bronchogenic carcinoma. It is clearly an active combination in small cell carcinomas, especially when used in conjunction with radiotherapy to the primary tumor.

Although experimental, there is growing evidence that stimulation of the body immune defense system with an agent such as BCG or corynebacterium parvum in proper schedule may be helpful in prolonging remissions that have been induced with other therapeutic modalities. This effect may be further enhanced by adding tumor cells to the vaccine thus stimulating a specific immune response to the tumor. Scheduling and antigen dose are of critical importance in this type of immunotherapy as the desired endpoint is a stimulation of cell mediated immunity but avoidance of evoking a humoral "blocking antibody" response that might result in enhanced tumor growth.

Much work remains to be done to determine the most effective schedule for immunotherapy, but it appears at present that the one opportune method is to use BCG in combination with chemotherapy as a form of chemoimmunotherapy. Such therapy should only be undertaken at the present time in carefully controlled studies with keen attention to laboratory assessment of the patient's immune function.

SPECIAL PROBLEMS

Superior Vena Caval Syndrome. The superior vena caval syndrome associated with bronchogenic carcinoma may be incipient in onset or rapidly fulminating with headache, venous distention, facial edema, syncope and mental symptoms. It may initially be treated briefly with diuretics prior to definitive therapy. If the superior vena caval syndrome is due to small cell carcinoma and symptomatology is minimal, it may be treated by systemic chemotherapy. However, the more fulminant forms, and those due to bronchogenic carcinoma other than the small cell type, should have immediate radiotherapy. At times, the use of nitrogen mustard prior to radiotherapy is justified.

Central Nervous System Metastases. Brain metastases, when the diagnosis is supported by objective criteria, are treated by radiotherapy. Prior to and awaiting radiotherapy, the patient may receive 2-4 mgs dexamethasone, intravenously, or orally every six hours, to reduce edema and improve symptoms. The dexamethasone can then be tapered after radiotherapy has begun to control symptoms. The chemotherapeutic agents that are available for general use are not effective in the treatment of metastatic carcinoma of the central nervous system.

General Supportive Care. In lung cancer, as in other areas of oncology, where treatment is less than satisfactory at this time, the liberal use of narcotic analgesics, tranquilizing drugs and sedatives is indicated. Good nursing care is obligatory. Most important is the role of the physician to provide comfort to the patient and his family with the important attributes of sympathy, empathy and compassion. Frequently, these will be the major contribution to the care of the unfortunate patient with this disease.

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Seminars in Endocrinology and Metabolism

THYROIDITIS: A PAIN IN THE NECK?

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

Greater sophistication in diagnosing various types of acute and chronic inflammatory lesions of the thyroid gland has accrued from a better understanding of their pathphysiology. Several serological and radiological procedures have been devised to help in the differential diagnosis of these disorders. Because clinically the results of these studies can be confusing, a brief review of the clinical and laboratory features of each condition may prove helpful.

Acute thyroiditis is due to bacterial invasion of the thyroid gland. The infection may arise *de novo* or more commonly it can be a manifestation of a primary infection elsewhere with spread to the thyroid gland via lymphatic or hematogenous pathways. Pain, swelling, redness locally and elevated spiking temperatures along

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with generalized nonspecific systemic effects are the cardinal features of this condition. The sedimentation rate is elevated as is the percentage of polymorphonuclear leukocytes. Additional laboratory studies are not overly helpful in making the diagnosis. Thyroid scans and uptakes can give a variety of results depending upon the severity and localization of the infection. Peripheral thyroid products are usually normal in this condition, however they may transiently be elevated or depressed depending again upon the severity of the infection. Treatment consists of systemic antibiotics which are specific for the offending organism. If localized abscess formation does occur, incision and drainage is sometimes necessary.

In contrast to the acute presentation of acute thyroiditis, the development of lowgrade fever, pain and tenderness in the anterior neck which can be migratory, i.e. moving from one side to the other side with radiation to the jaw, is quite common for *subacute* thyroiditis. This disorder carries the eponym De Quervains' thyroiditis. The etiology is not well established although Coxsackie and mumps viruses have been implicated in the past. Nevertheless, the disease usually is self-limited but can have significant systemic manifestations which may prolong its course. Thus, some patients experience resolution of symptoms within three to four weeks, whlie others have severe constitutional effects, such as lethargy and tiredness, which can last for six months to a year. Ultimately, the symptoms dissipate spontaneously without producing long-term impairment of thyroid gland function.[1] In contrast to patients with chronic thyroiditis, very few patients with subacute thyroiditis develop hypothyroidism unless another superimposed thyroid abnormality supervenes. Clinically, these patients present with elevated sedimentation rates as those with acute thyroiditis, but their polymorphonuclear cell counts are usually only minimally elevated. Fever is a variable feature of the disease but may be lowgrade in contrast to that of acute thyroiditis. Classically, the results of various laboratory and radiological procedures yield data which can be confusing but when taken in perspective usually are diagnostic of this condition. For instance, during the acute presentation, peripheral thyroid products may be elevated. Subsequently they can fall to hypothyroid levels only to return to normal. Because of the acute release of preformed thyroid hormone stored in the glandular follicles a rapid rise in thyroxine levels can occur. Ultimately, as these hormone products are metabolized levels decline. Since the thyroid gland may still be recovering from the acute viral insult, its biosynthetic apparatus may be transiently impaired. Thus, there can be a period during which thyroxine levels are low. This can be demonstrated by following the sequential changes which take place in radioactive iodine uptake by the gland and by utilizing newer scanning procedures which visualize the stable iodine within the thyroid gland.[2] Very low uptake of radioactive iodine by the acutely disordered gland and loss of its previous stores of stable iodine can be demonstrated. Recovery of normal function following these events can be prolonged and depending upon when the studies are performed during the natural history of the disease will determine the results obtained. Ultimately these patients, as previously mentioned, have normal thyroid function although they may be symptomatic for prolonged periods of time. The treatment of the condition is somewhat empiric in that most patients' discomfort in the neck can be treated with mild analygesics although on occasion more potent ones need to be employed. Short term treatment with systemic corticosteroids has been advocated by several authors for use in patients with severe systemic symptoms who do not obtain relief with mild analgesics. An almost immedite cessation of the systemic symptoms of the disease usually occurs after their administration. Once they are withdrawn however, many patients experience a recrudescence of their initial symptoms. If a recrudescence does occur a second short trial can be instituted. Sequential radioactive iodine uptakes can serve as a means of predicting when their withdrawal may prove beneficial.[3] Since corticosteroid medications have significant side effects, they must be used sparingly and under the careful observation of a physician well versed in their actions.

In contrast to the preceding two varieties of "thyroiditis," chronic lymphocytic thyroiditis or Hashimoto's thyroiditis is usually a painless type of thyroid gland inflammation. The etiology of this condition is not known with certainty but current thought would suggest that cell mediated immunity may be responsible for the destruction of the gland. Evidence in favor of this approach has accumulated in recent years.[4] In addition, there has been demonstrated circulating peripheral antibodies to various cellular components of the thyroid gland. Although it is not known whether these are causal or secondary to tissue destruction, they serve as useful clinical markers for the condition. The presentation of Hashimoto's thyroiditis can be protean. Patients may complain of an enlargement in their neck, usually without much discomfort unless there are pressure symptoms. Pain and tenderness, so characteristic of subacute thyroiditis, is usually lacking in patients with chronic thyroiditis. Thus, on clinical grounds alone, one can sometimes distinguish the two conditions. Furthermore, on physical examination the gland of Hashimoto's thyroiditis is usually nontender and supposedly has a characteristic "feel" which has been likened to a "cobblestone" texture. If the disease is longstanding, symptoms of hypothyroidism may predominate the clinical presentation as the natural history of the disease is one of chronic inflammatory changes which ultimately can lead to replacement of all normally functioning tissue. There are several classic laboratory findings which help with the diagnosis. As mentioned above, circulating antithyroid antibodies are usually present. However, their abscence does not exclude the diagnosis, especially if the disease is present for many years as it has been shown that antibody titers do decline with time. Thus, patients who have the disease for many years may not have detectable antibody titers in their plasma when first seen for symptoms of hypothyroidism. Furthermore, not every patient with Hashimoto's thyroiditis develops these antibodies and thus their absence again should not exclude the diagnosis completely.

Because there is chronic destruction of the thyroid gland over a prolonged period of time the findings of radioactive iodine uptake and scan can be variable. Classically, an elevated uptake with a mottled appearance on scan is seen. The elevated uptake is a reflection of the difficulty these glands have in incorporating trapped iodine into thyroid hormone. This is due to the development of abnormalities in the biosynthetic pathways within the gland due to the chronic inflammatory changes of the condition. Thus if a procedure is performed after radioactive iodine uptake to see whether this iodine can be released from the gland one can document that such a defect is present. This is occasionally a helpful diagnostic procedure especially when antibody titers are negative. Most patients with Hashimoto's thyroiditis if followed long enough will develop signs of hypothyroidism. These may be subtle, i.e., slight elevations in serum thyroid stimulating hormone (TSH) levels with normal peripheral thyroid gland products or gross myxedematous changes. The treatment of this condition is usually conservative if the patient is euthyroid and has normal levels of circulating TSH. If TSH levels are elevated with normal peripheral products, a case can be made for the institution of thyroid hormone. This would indicate that the thyroid gland has a limited capacity to make thyroid hormone. Furthermore, the cosmetic effects of an enlarged gland can sometimes be improved by the use of thyroid hormone, especially if the gland is under increased TSH stimulation.

The last type of "thyroiditis" is much rarer and bears the name Riedel's stuma. This gland appears as a hard, firm gland, somewhat difficult to distinguish from carcinoma. The etiology of this condition is not known with certainty and patients usually are euthyroid, however, they may develop hypothyroidism. The infrequency of this condition has hindered studies aimed at evaluating its etiology. Its longterm course is also unknown since many such patients have had thyroidectomies in order to differentiate the condition from thyroid carcinoma. Therapeutically, when there is doubt concerning a diagnosis in this condition, surgical biopsy is probably indicated to be certain that underlying malignancy is not present. Longterm treatment with thyroid hormone probably is indicated although there is limited information concerning longterm treatment of this condition.

In summary, there are four major varieties of "thyroiditis" which can present clinically. The most common variety is probably chronic lymphocytic thyroiditis or Hashimoto's thyroiditis. Subacute thyroiditis is the most benign of these conditions and it probably is next in frequency. Acute bacterial thyroiditis and Riedel's struma are much rarer conditions. Careful attention to clinical presentation and physical findings in addition to the results of routine and special laboratory studies should help in the differential diagnosis and treatment.

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Department of Health Services

THE HEIMLICH MANEUVER

JAMES L. SCHAMADAN, M.D.

The Heimlich Maneuver, a simple life saving technique for aiding choking victims, really works. Two of our employees used it successfully in a life threatening situation. Linda Wanamaker and Virginia Benson are secretaries at the Department, and they recently learned of the procedure when the Department launched a project to acquaint the public with the technique. Mrs. Wanamaker rescued a woman eating at a Phoenix restaurant, while Mrs. Benson used it on her daughter.

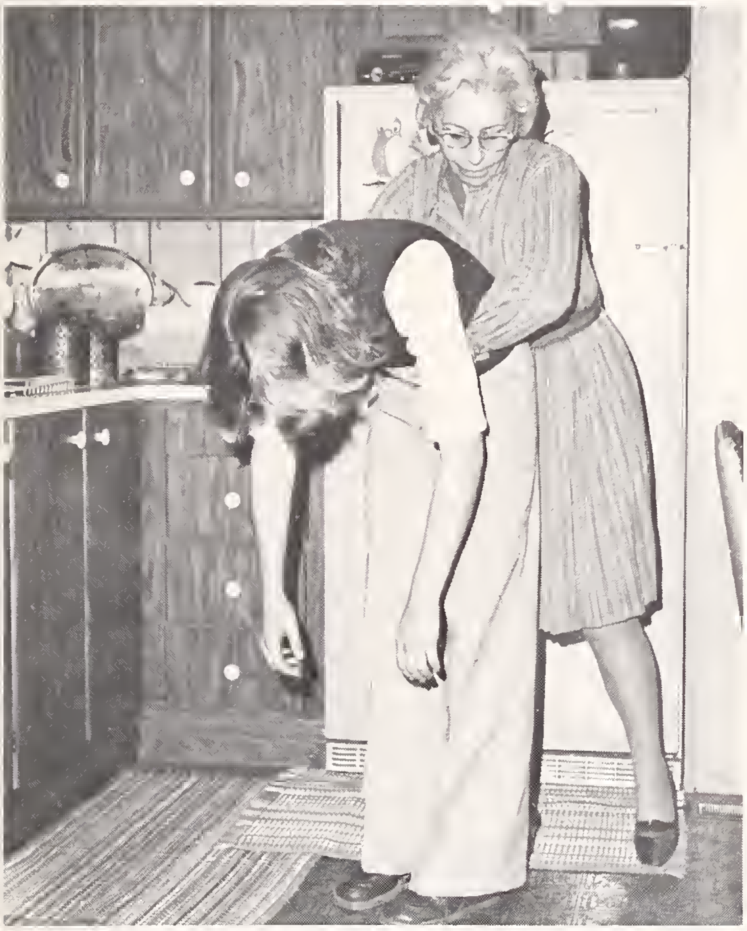
The procedure to relieve the "cafe coronary" is named after its originator, Dr. Henry J. Heimlich, director of surgery at Jewish Hospital in Cincinnati. Dr. Heimlich developed the maneuver as an alternative to emergency tracheostomy. He has tested the maneuver successfully on dogs, and in the last six months he has accumulated information on over 100 cases of human lives being saved by the use of his technique. Sidney Blubaugh, M.D. (Emergency Room, St. Joseph's Hospital in Phoenix), is forwarding to Dr. Heimlich information about the use of the Heimlich Maneuver in Arizona. Dr. Blubaugh has collected data on successful rescues involving both children and adults choking on such objects as candy, ice, and capsules of medicine, as well as food.

With the report of the sudden tragic death by choking of Thomas McWilliams, M.D. of Phoenix, we are once again reminded that we physicians too are subject to the hazards of accidental death. I urge you therefore, to acquaint yourself, your office staff and your patients with this simple procedure.

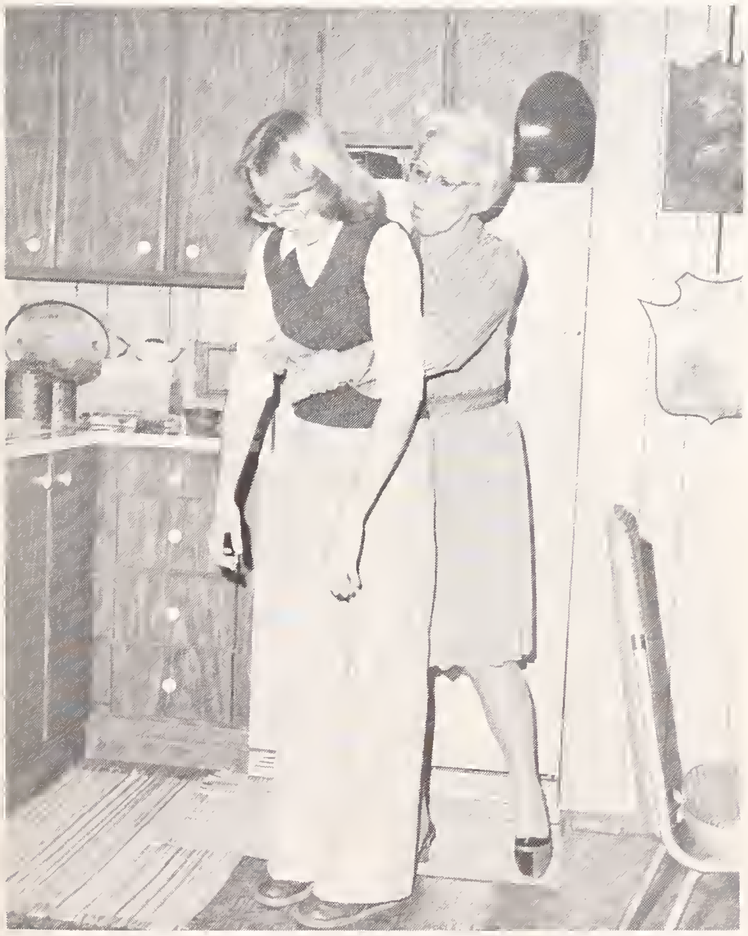
This is how it works. Standing behind the victim, the rescuer grasp the victim around the waist allowing the victim's head and upper torso to hang forward. Making a fist with one hand, the rescuer graps the fist with the other hand and places it against the abdomen between the navel and the ribs. Then the fist is pressed into the abdomen with a sharp, upward thrust. The residual air in the lungs is forced upward, expelling the obstruction.

The procedure should be repeated until the obstruction is dislodged, and although there is a

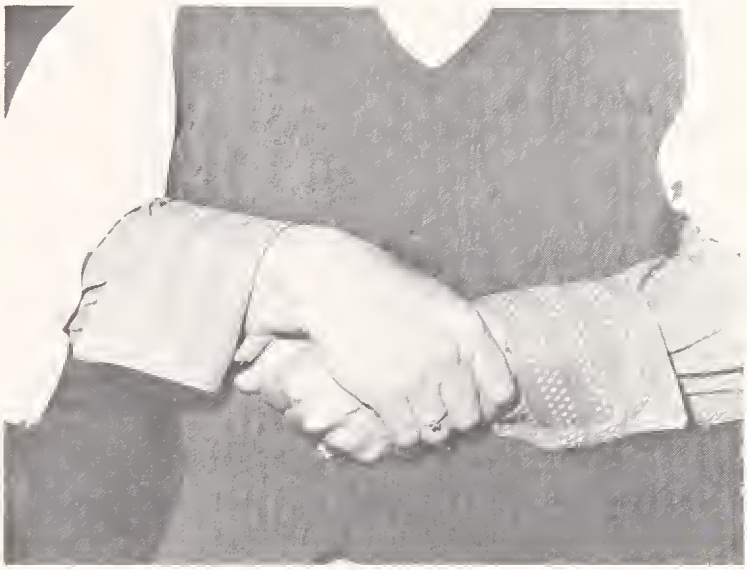
Virginia Benson, a secretary at the Department, recreates the episode in which she used the Heimlich maneuver to aid her daughter who was choking on a piece of Bar-B-Qued beef.



1. Standing behind the victim, Mrs. Benson grasped her daughter around the waist, allowing her head and upper torso to hang forward.



3. Mrs. Benson then pressed the fist into the abdomen with a sharp upward thrust, expelling the obstruction.



2. Making a fist with one hand, Mrs. Benson grasps the fist with the other hand and places it against the abdomen between the navel and the ribs.

slight risk of injury (there have been cases of cracked ribs resulting from misplacement of hands), the alternative is cerebral hypoxis or death. A variation of the procedure may be applied if the victim has already collapsed. Anyone can learn the effective and simple maneuver with little instruction.

Be sure to advice your patients on how to distinguish between a "cafe coronary" and a heart attack. The most important difference is that the choking victim, although conscious, *cannot speak.*

The Department has put together a special team engaged in a statewide campaign to publicize the technique. Demonstrations and interviews have been conducted on radio and television; posters and leaflets have been distributed to all food service establishments. In addition, we have met over 500 requests for materials from schools, industry, health care institutions and private individuals. One unusual request for information on the Heimlich Maneuver came from the producer of the television show "Hollywood Squares." Since the campaign was launched in December, at the amazingly small expenditure of $600.00, we know of six successful rescues that have taken place. Six lives may have been saved.

Materials describing the Heimlich Maneuver are available in quantity to you and your doctors. Simply call or write the Bureau of Health Education, Arizona Department of Health Services, 1740 West Adams Street, Phoenix, 85007, 271-5364.

Editorial

AUSTRALIA AND NEW ZEALAND — THE LAST FRONTIER?

By Robert C. Briggs, M.D.

Australia and to some extent New Zealand have been thought of for many years as the "Last Frontier" — the "new America." The following article relates to the field of medicine and how it lends itself to this consideration.

In November of 1974, I had the opportunity to travel to New Zealand and Australia and I visited various medical institutions and learned first hand the way medicine is practiced in these South Pacific areas. In particular, I had a lengthy discussion with Dr. W. M. G. Leembruggen, the Deputy Secretary of the State Medical Association of Victoria, Australia.

If New Zealand and Australia hold the promise of new opportunities in other fields of endeavor, this might not apply in the case of medicine. Assuming one is totally familiar with the American system of medicine, as compared to the British system, one would have to say the Australian system seems to favor a modified American system. In place of private medical insurance popular in the United States, the government of Australia actually promotes a national insurance policy which subsidizes the patient's medical expenses. The patient pays a premium equal to $170.00 per year per family, which covers approximately 35% of the medical bills paid, and the government supplies 55% through a tax fund. The physician is given a book containing proposed charges. He may charge more and any difference is collected by billing the patient direct. If he charges the "book price" he usually needs to seek only 5 to 10% from the patient.

The system of government in Australia at present which is able to provide for this arrangement is a "Labor" government; quite liberal (Socialist), and because of recent economic trends in conjunction with its own policy, it is fast losing it appeal with the people. The "Liberal" party (Conservative in nature) may soon be in office, which will be advantageous to the medical profession in Australia as indicated by Dr. Leembruggen.

The reverse of this situation is true in the United States where a relatively conservative administration is losing to a more liberal establishment. The point is, a more liberal government tends to pose non-liberal measures on business and conservative governments do not. As a case in point, the Australian labor or socialist government is attempting to pass laws making the Australian medical system a combination of the British and Canadian systems, i.e. socialized medicine. It is hoped that this will not succeed. In New Zealand the socialist government has been in power for many years and medicine is under government regulation, according to Dr. Peter E. G. Loten, of Aukland. Here fees are set by the government and the doctor is paid by the government direct, similar to the British system. It is noteworthy that taxes are a straight 30% of your income in New Zealand.

On the subject of salaried physicians, I learned that the hospital system in Australia and New Zealand is not as highly organized as it is in the United States. However in Canberra, the capital city of Australia, the only hospital is attempting to hire all full-time physicians. The maneuver is currently being met by a "black ball" by local physicians, or a boycott as we know it. Canberra is equal to Washington, D.C. where the government has a strong hold over all business interests since 60 to 70% of the people work directly for the government and the remainder work for it indirectly. Therefore, a showdown between the physicians and a government controlled hospital may not be met with the same success as that achieved by physicians in Phoenix, Arizona during a recent controversy with a local hospital on a similar issue. It is surprising that with regard to salaried physicians we do find them working in administrative positions in the Australian Medical Association much more than in the United States, where most administrative posts go to laymen. We in the United States might take a lesson from this sidelight of Australian medicine in that a physician as an administrator may act more in the interest of medicine than one with limited medical experience. Unfortunately in the United States most doctors are reluctant to take the time to become involved in this way, myself included.

As for the need, there appears to be no absolute shortage of physicians in Australia or in New Zealand: 15,000 for 15,000,000 population. There is however, that time-honored problem of mal-distribution. In the United States this problem is being remedied in part by the implementation of the nurse practitioner or the physician's assistant. There is no such program in Australia or New Zealand. The people there have formed the equivalent of a health planning council which has created community medical clinics. They employ nurses, therapists and occasionally general practitioners in an effort to extend medical services. These clinics are not under the auspices of the Medical Association or doctors, but are funded and managed by the government.

In order to become a doctor in the countries "down-under," the average medical student enters medical school following the completion of high school at age eighteen. The course of study takes six years and involves book work and general study until the fourth year, when he begins the clinical aspect of medicine. The fifth and sixth years, he studies as an extern. When he graduates, he has earned the degree of M.B.B.S., (Bachelor of Medicine and Surgery); equal to our M.D. degree in the United States. It is then necessary for him to complete one year as an intern before he can be registered to practice medicine. If he specializes, it will generally take an additional five years of study.

Most graduates take the ECFMG exam and 95% of them pass. This makes them eligible to qualify to practice in the United States. All graduates are qualified to practice medicine in any state or territory in Australia, in New Zealand, Britain, and Ireland. For those who still feel an exodus to Australia is the solution to a problem, there is one of three or four ways to qualify to practice there. (This is for a practitioner who holds a medical degree or diploma from any country other than those just stated.) 1. By completing the final three years of the medical course of an Australian university and obtaining the degree of Bachelor of Medicine and Bachelor of Surgery of the university. 2. By satisfying the Board that he possesses, medical and surgical knowledge, experience and skill which, in the opinion of the Board, are of international standing or are such as to have special value to the people of Victoria. 3. By satisfying the Foreign Practitioners Qualification Committee that he is a fit and proper person to be registered as a legally qualified medical practitioner. Each applicant must produce the originals of degrees or diplomas, evidence of identity, a summary of the curriculum vitae, and a summary of medical work since graduation.

There is still another form of medicine practiced in the South Pacific Islands which is completely socialized, rather inexpensive, and probably one of the oldest. It is that practiced by the Maori Indians who first settled in New Zealand. I don't believe many doctors would want to qualify for this form of practice because, among other things, it requires that you sit in a small hut all day long and you are fed meals served on the end of a stick! Physicians both in this area and in the United States, are attempting to practice medicine on what is called a more natural level, related to herbs and plants in New Zealand and health foods and vitamins in the United States.

To end the article on an equally light note, and for those of you that insist that medical articles should relate or consist of some medical application, I offer the following to our friends of the Internal Medical and Psychiatric section; The Kuala bear — almost going into extinction, is purportedly the only animal (as opposed to some birds) that can actually die from fright. If that isn't enough, the one for the Gynecologist and abortion preventors might be enjoyed by all; The noble Kangaroo has the ability when pregnant to delay its delivery and progression of pregnancy from up to 1-12 months if necessary. Interesting A-What - - - - - -.

Topics Of Current Medical Interest

DOCTOR — WHAT SHOULD I EAT?

Is organic food healthier? Should I take Vitamin E? A? C? Lecithin? rose hips? oysters? fertile eggs? The scare claims of soil depletion, pesticides and additives and the huckstering of fad diets and wonder foods provide an overabundance of food misinformation.

Dr. Atkins "diet revolution" is one of the many reincarnations of the low carbohydrate diet; it makes no more physiologic sense now than it did in 1953 as the Pennington or Dupont diet. Dr. Jean Mayer suggests, "If you are middleaged and overweight, putting yourself on this faddish, high saturated fat, high cholesterol diet is playing Russian roulette with your heart and blood vessels as stakes."

The other side of the coin, as Dr. Stillman's "Inches off Diet" which omits cheese, eggs, milk, meat, legumes, poultry and seafood is also hazardous to health. Miraculous claims have been made for just about every food or nutrient. The 'super C' or grapefruit diet that claims to melt pounds away, while you eat lobster in butter sauce has been a perennial favorite. A "better SEX life" has been offered by almost everything including sunflower seeds, vitamin E, lecithin and epsom salts.

The dangers of food misinformation are twofold, reliance on miracle claims instead of good medical care and disproportionate spending of the food budget on so called "Health" foods can both lead to malnutrition. The basis of any rational diet, normal or therapeutic, must be the adequacy of nutrients. Whether the calories are increased or decreased, or if one category of food must be omitted, careful planning can provide adequate nutrition.

The patient often looks to his physician for dietary guidance. As an adjunct to the sound nutrition advice the physician can provide, the Nutrition Council of Arizona offers reliable, free, printed materials for distribution to patients.

To receive samples, please indicate your areas of interest when you call or write:

NUTRITION COUNCIL OF ARIZONA
3737 E. Indian School Rd., Phoenix 85018
957-0450
or
717 N. Swan Rd., Tucson 85711, 795-5759

Categories:

Normal Nutrition
Weight control
Perinatal nutrition
Feeding young children
Nutrition for Elderly
Food additives and nutrition labeling

The slogan for National Nutrition Week, March 2-8, 1975 "Food Fads Fool."

84TH ANNUAL MEETING

Of The

ARIZONA MEDICAL ASSOCIATION

At The

BRANIFF PLACE HOTEL AND TUCSON COMMUNITY CENTER

APRIL 22 - 26, 1975

SCIENTIFIC PROGRAM APPROVED FOR 14½ REQUIRED HOURS
TOWARD ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION

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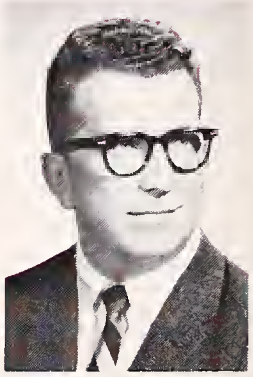
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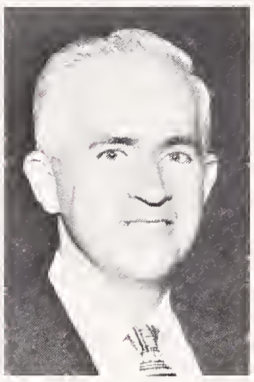
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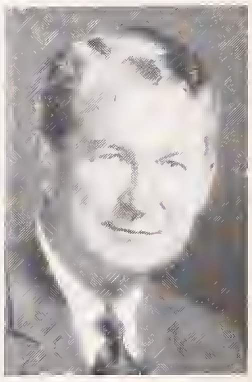
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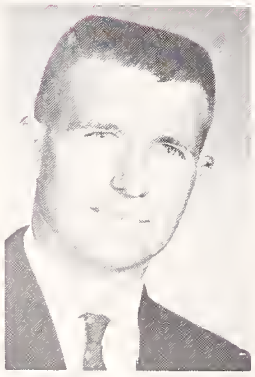
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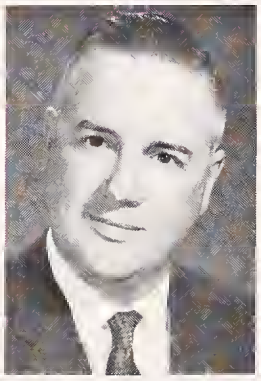
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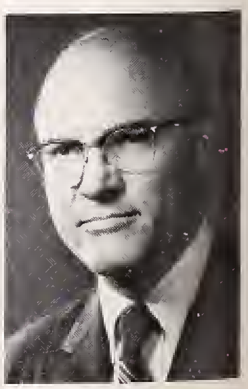
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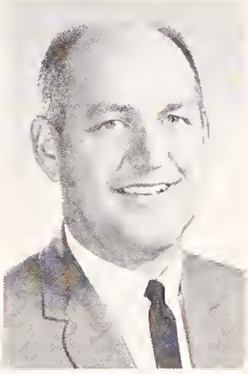

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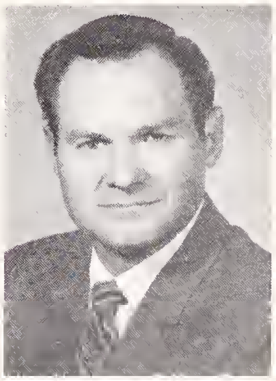

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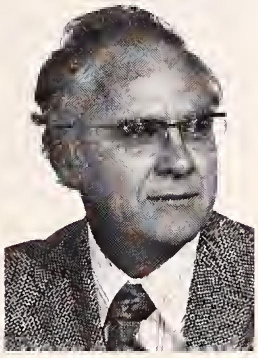

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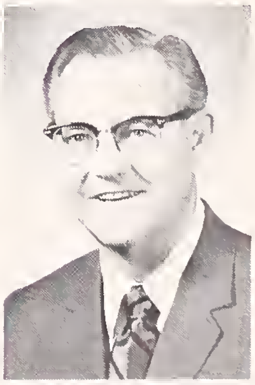

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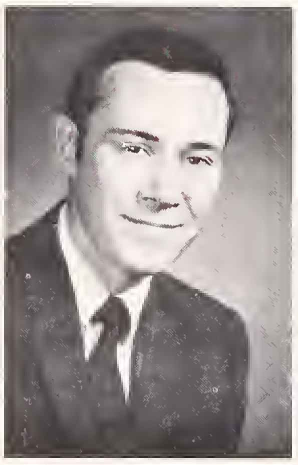

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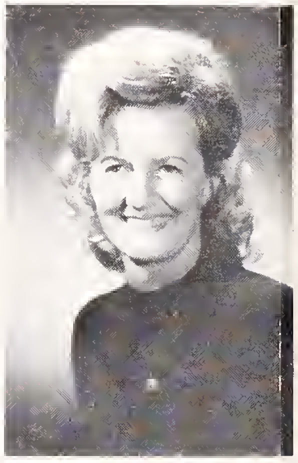

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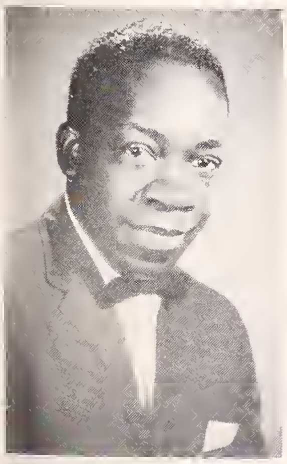

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ANNUAL MEETING PROGRAM

TUESDAY AT A GLANCE

TUE. A.M.	SONORA Room - Braniff	BALLROOM #1 - Braniff	BALLROOM #2 - Braniff	
7:00	Executive Committee Breakfast			
9:00		Board of Directors Meeting		
12 Noon		Board of Directors Luncheon		
1:00 P.M.			HOUSE OF DELEGATES	

HOUSE OF DELEGATES
FIRST GENERAL SESSION

CALL TO ORDER
William G. Payne, M.D., President

INVOCATION AND MEMORIAL SERVICE
The Reverend William P. Weeks
Rector
Grace Episcopal Church, Tucson

WELCOME
James L. Parson, M.D., President
Pima County Medical Society

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Mrs. Betty May, Past-President
Arizona Association of Medical Assistants, Inc.
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Woman's Auxiliary to the Arizona Medical Association

INTRODUCTION OF INCOMING PRESIDENT
William G. Payne, M.D.

PRESIDENTIAL ADDRESS
William C. Scott, M.D.

REGULAR BUSINESS OF THE HOUSE
Refer to the AGENDA section of the Delegates Manual

3:30			Blue Shield Annual Corporate Body Meeting First Session	

ANNUAL MEETING PROGRAM

WEDNESDAY AT A GLANCE

WED. A.M.	BALLROOM #1 - Braniff	BALLROOM #3 - Braniff	DURANGO - Braniff	SONORA - Braniff
8:00	ArMA Resolutions Reference Committee to be followed by Blue Shield Resolutions Reference Committe	BREAKFAST PANEL: The Great Debate - The Pros & Cons of Hysterectomy for Sterilization	ArMA Amendments Reference Committee	
12:00 NOON				PAST PRESIDENT'S LUNCHEON
	SPORTS			
12:00 NOON	ANNUAL GOLF TOURNAMENT TEE-OFF TIME The Tucson National Golf Club 8300 N. Club Drive		$7 Green Fee $5.25 per person golf cart fee proof of handicap required	
12:30 P.M.	ANNUAL TENNIS TOURNAMENT Tucson Racquet and Swim Club 4001 N. Country Club Road			
WED. P.M.	ROOM 04 - Braniff Mezzanine	Braniff Place Lower Lobby	Old Tucson	
2:00	United Medical Care Foundations of Arizona, Inc. Board of Directors Meeting			
6:00		Buses Leave for "OLD TUCSON"		
6:30		A NIGHT IN OLD TUCSON Steaks, Dancing & Fun	A NIGHT IN OLD TUCSON Steaks, Dancing & Fun	
10:30			Buses LEAVE OLD TUCSON for Hotel	

ANNUAL MEETING PROGRAM

THURSDAY MORNING AT A GLANCE

7:30-8:45 a.m. BREAKFAST PANEL: "The Physician's Assistant and Nurse Practitioner - How To Use Them" - Ballroom #3, Braniff

THURS. A.M.	APACHE Meeting Room	COCHISE Meeting Room	MARICOPA Meeting Room	MOHAVE Meeting Room
9 - 9:30	"Medical Ethics" - PANEL Discussants: Mr. Harry Cavanagh, Atty. Mr. Sam Gallant, C.P.A. Vernor F. Lovett, M.D. Moderator: Joseph W. Hanss, Jr., M.D.	"Early Ambulation of Patients with Hip Fractures Treated by the Compression Hip Screw" Melvin D. Roberts, M.D.	"Organ Transplants" - PANEL Discussants: John J. Bergan, M.D. William W. Bohnert, M.D. Vincent J. O'Conor, M.D. Charles F. Zukoski, M.D. Moderator: Kenneth E. Johnson, M.D.	"Diagnosis & Treatment of Malignancies of Colon, Rectum and Anus" James R. Hines, M.D.
9:30-10		"The Development and Clinical Implementation of a Total Wrist Joint" Robert G. Volz, M.D.		"Systemic Manifestations of Bronchogenic Carcinoma" John P. Utz, M.D.
10-10:30		"New Techniques and Devices in Rehabilitation of the Quadriplegic or Paraplegic Patient" Henry Betts, M.D.		"The Arthridites - Diagnosis and Treatment" Frank Schmid, M.D.
10:30-11	RECESS	10:30-11 RECESS	10:30-11 RECESS	10:30-11 RECESS
11-11:30	"Growth Retardation" Henry Nadler, M.D.	"Woman Alone" Mr. Daniel O'Connell	"The Inflamed Eye" Joel Sacks, M.D.	"Surgical Considerations in Treatment of Transsexuals" Paul L. Schnur, M.D.
11:30 - 12	"That Little Lump in the Neck" George A. Sisson, M.D.	"Conflict, Stress & Coping Strategy" Harold Visotsky, M.D.	"Blood Availability for Rural Areas - Autotransfusion" Kenneth L. Mattox, M.D.	"Endoscopy in Obstetrics & Gynecology - The Current Status of Laparoscopy, Hysteroscopy & Fetoscopy" David Pent, M.D.

ANNUAL MEETING PROGRAM

THURSDAY AFTERNOON AT A GLANCE

12 Noon - 2 p.m. - SPECIALTY LUNCHEONS

THURS. P.M	APACHE Meeting Room	COCHISE Meeting Room	MARICOPA Meeting Room	MOHAVE Meeting Room
2 - 2:30	"Sins of Obstetrics" Ralph A. Reis, M.D.	"Intraoperative Ultrasound Evaluation of the Mitral Valve" Vincent Friedewald, M.D.	"The Evaluation and Management of Pain" James Eckenhoff, M.D.	"Surgical Treatment of Peptic Ulcer and Its Complications" James R. Hines, M.D.
2:30 - 3	"Urinary Tract Dysfunction - Stress Incontinence in Women & Prostate Surgery in Men" Vincent J. O'Conor, M.D.	"Invasive and Non-Invasive Techniques in the Diagnosis of Cradiac Disease" Sheridan Meyers, M.D.	"Abdominal Trauma: When To Go In; When To Stay Out" Douglas H. Lindsey, M.D.	"Fever & Leukocytosis Following Intravenous Heroin" Brendan D. Thomson, M.D.
3 - 3:30	RECESS	3 - 3:30 RECESS	3 - 3:30 RECESS	3 - 3:30 RECESS
3:30 - 4	"Status Asthmaticus" Chester R. Zeiss, M.D.	"The Attainment of a Zero Hospital Mortality Rate in Permanent Cardiac Pacemaker Surgery" Earl J. Baker, M.D.	"Tendon Injuries in the Hand; Pitfalls in Diagnosis and Treatment" Lawrence M. Haas, M.D.	"The Causes and Prevention of Drug Abuse" - PANEL Discussants: Allan Beigel, M.D. George E. Stavros, M.D. Harold Visotsky, M.D. Moderator: Laurence M. Linkner, M.D
4 - 4:30	"The Differential Diagnosis and Treatment of Collagen Diseases" Frank Schmid, M.D.	"Criteria for the Selection of Patients for Coronary Artery By-Pass" Sheridan Meyers, M.D.	"Common Eye Disorders" Joel Sacks, M.D.	
4:30 - 5	"The Control of Wound Contraction: An Experimental Model" Phillip A. Stone, M.D.	"Homograft Veins for Arterial Reconstruction" Ravindranath Koopot, M.D	"Experience in the Use of Acupuncture" John P. Utz, M.D.	

ANNUAL MEETING PROGRAM

FRIDAY MORNING AT A GLANCE

7:30-8:45 a.m. BREAKFAST PANEL: "The American Indian School of Medicine and Indian Health" - Ballroom #3, Braniff

FRI. A.M.	APACHE Meeting Room	COCHISE Meeting Room	MARICOPA Meeting Room	MOHAVE Meeting Room
9 - 9:30	"Salivary Gland Tumors" George A. Sisson, M.D.	"The State of Medical Education Today and a Look at the Future" - PANEL Discussants: James Eckenhoff, M.D. Neal A. Vanselow, M.D. Moderator: Robert E. T. Stark, M.D.	"The Importance of Testing for Atypical Mycobacteria in Arizona Children with Tuberculin Skin Test Conversion" William E. Larter, M.D.	"Non-Invasive Techniques in the Diagnosis of Peripheral Vascular Disease" John J. Bergan, M.D.
9:30 - 10	"Current Concepts in the Treatment of Allergic Disorders" Chester R. Zeiss, M.D.		"The Many Faces of Depression" Harold Visotsky, M.D.	"The Role of Endarterectomy with Vein Bypass in Direct Coronary Arterial Surgery" Claudio Zamorano, M.D.
10 - 10:30	"Presumptive Viral Diagnosis: A Developing Clinical Tool in the Management of Infectious Diseases" Otto F. Sieber, Jr., M.D.		"Tropical Diseases In Arizona" J. Jacob John, M.D.	"Diagnosis and Treatment of Breast Disorders" James R. Hines, M.D.
10:30 - 11	RECESS 10:30 - 11	RECESS 10:30 - 11	RECESS 10:30 - 11	RECESS 10:30 - 11
11 - 11:30	"Scrotal Swelling" Vincent J. O'Conor, M.D.	"The Roles of Rehabilitation Medicine in a Medical Center" Henry Betts, M.D.	"Nuclear Medicine for the General Physician" Robert E. O'Mara, M.D.	"Clinical Experience with the L/S Ratio in High Risk Pregnancies" David G. Mong, M.D.
11:30 - 12	"Traumatic Renal Artery Thrombosis with Kidney Survival" F. Darwin Zahn, M.D.	"Utilization of Scoliosis Principles in the Treatment of Dorsal & Lumbar Fractures" Richard J. Haynes, M.D.	"The Hazards of General Anesthetics" James Eckenhoff, M.D.	"Genetic Counseling" Henry Nadler, M.D.

ANNUAL MEETING PROGRAM

FRIDAY AFTERNOON AT A GLANCE

FRI. P.M.	APACHE Meeting Room	COCHISE Meeting Room	MARICOPA Meeting Room	MOHAVE Meeting Room
2 - 2:30	"A Reevaluation of the Care of the Rape Victim" Joseph W. Hanss, Jr., M.D.	"Rehabilitation in Diseases of the Cardiovascular System" Henry Betts, M.D.	"The Eye in Systemic Disease" Joel Sacks, M.D.	"Use of Realtime Ultra-Sound Scanner in Obstetrics" Marilyn K. Laughead, M.D.
2:30 - 3	"Pediatric Trauma - The Child Abuse Syndrome" Henry Nadler, M.D.	"Sins of Pelvic Surgery" Ralph A. Reis, M.D.	"Broncho-Pulmonary Sequestration in Children" George A. Streza, M.D.	"Neonatal Mepivicaine Toxicity Following Para-cervical Block Anesthesia" Stephen W. Hales, M.D.
3 - 3:30	RECESS 3 - 3:30	RECESS 3 - 3:30	RECESS 3 - 3:30	RECESS 3 - 3:30 RECESS
3:30 - 4	"Mecholyl Inhalation Test for Asthma in the Office Practice" Suresh C. Anand, M.D.	"The Coronary Care Unit and the Para-professional in the Community Hospital" Sheridan Meyers, M.D.	"Intermitant Claudication of Neuro-Spinal Origin" John J. Bergan, M.D.	"Ultrasound" - PANEL Discussants: Avi Ben-Ora, M.D. Gordon A. Ewy, M.D. Kai Haber, M.D. David J. Sahn, M.D. Moderator: Harlan R. Giles, M.D.
4 - 4:30	"Newer Immunologic Dis-orders and Their Treatment" Chester R. Zeiss, M.D.	"Cardiac Arrest Study at Walter O. Boswell Hospital in Sun City, Arizona" Walter W. Sittler, M.D.	"Low Friction Arthroplasty-Analysis of 700 Cases" Richard K. Truluck, M.D.	
4:30 - 5	"Thyroid Neoplasms - Management" George A. Sisson, M.D.	"The Use of Valium and Nisentil for Outpatient Therapeutic Abortions" Robert H. Tamis, M.D.	"Omental Transposition for Lymphedema" Gabriel F. deFreitas, M.D.	

SATURDAY AT A GLANCE

SAT. A.M.	SONORA - Braniff	BALLROOM #1 - Braniff	CHIHUAHUA - Braniff	DURANGO - Braniff
6:00	Pima County Caucus			
8:00	HOUSE OF DELEGATES SECOND GENERAL SESSION to be followed by Blue Shield Annual Corporate Body Meeting Second Session			
12 Noon			ArMA Board of Directors Meeting and Luncheon	
12 Noon	Arizona Society of Pathologists - Luncheon		Arizona Society of Anesthesiologist - Luncheon	American College of Emergency Physicians, Ariz. Chapter - Luncheon

GUEST SPEAKERS

SURESH C. ANAND, M.D.
Phoenix
EARL J. BAKER, M.D.
Phoenix
ALLAN BEIGEL, M.D.
Tucson
JOHN J. BERGAN, M.D.
Magerstadt Professor of Surgery, NWU
HENRY B. BETTS, M.D.
Professor and Chairman, Dept. of Rehabilitation Medicine, NWU
WILLIAM W. BOHNERT, M.D.
Phoenix
MRS. MICKEY BURCHARD, R.N.P.
Tucson
DANIEL B. CARROLL, M.D.
Phoenix
MR. HARRY J. CAVANAGH
Attorney, Phoenix
MRS. JEAN CHAUDHURI
Director, Traditional Indian Alliance of Greater Tucson — Tucson
GABRIEL F. DE FREITAS, M.D.
Phoenix
JAMES E. ECKENHOFF, M.D.
Dean, Northwestern University Medical School
Professor of Anesthesia, NWU
WALTER R. EICHER, M.D.
Chandler
VINCENT FRIEDEWALD, M.D.
Phoenix
MR. SAM GALLANT
C.P.A., Phoenix
MR. MELVIN R. GARDNER
Program Administrator, Navajo National Health Foundation — Ganado
LAWRENCE M. HAAS, M.D.
Tucson
STEPHEN W. HALES, M.D.
Phoenix
KAI HABER, M.D.
Tucson
JOSEPH W. HANSS, Jr., M.D.
Phoenix

RICHARD J. HAYNES, M.D.
Phoenix
IRVIN E. "CHIEF" HENDRYSON, M.D.
Director, Manpower and Allied Health Sciences, Navajo Health Authority, Window Rock
JAMES R. HINES, M.D.
Vice Chairman, Dept. of Surgery, and Director of Graduate Training in Surgical Education, NWU
T. JACOB JOHN, M.D.
Tucson
SIDNEY R. KEMBERLING, M.D.
Tucson
RAVINDRANATH KOOPOT, M.D.
Phoenix
WILLIAM E. LARTER, M.D.
Tucson
MARILYN LAUGHEAD, M.D.
Phoenix
MR. RICK LAVIS
Administrative Assistant to Senator Paul Fannin, Washington, D.C.
DOUGLAS H. LINDSEY, M.D.
Tucson
JOHN G. LINGENFELTER, M.D.
Kingman
KENNETH L. MATTOX, M.D.
Assistant Professor of Surgery, Baylor College of Medicine, Texas Medical Center — Houston
SHERIDAN MEYERS, M.D.
Assistant Professor of Medicine, NWU
DAVID G. MONG, M.D.
Phoenix
TAYLOR McKENZIE, M.D.
Dean, American Indian School of Medicine
Window Rock
HENRY NADLER, M.D.
Chairman, Dept. of Pediatrics, NWU
MR. DANIEL O'CONNELL
Attorney, Tucson
VINCENT J. O'CONOR, M.D.
Professor of Urology, NWU
ROBERT O'MARA, M.D.
Tucson
DAVID PENT, M.D.
Phoenix
RALPH A. REIS, M.D.
Northwestern University
MELVIN D. ROBERTS, M.D.
Tucson
JOEL SACKS, M.D.
Assistant Professor of Ophathalmology and Neurology, NWU
DAVID J. SAHN, M.D.
Tucson
DR. JOHN SCHAEFFER
President, University of Arizona
FRANK SCHMID, M.D.
Professor of Medicine, NWU
PAUL L. SCHNUR, M.D.
Tucson
OTTO F. SIEBER, M.D.
Tucson
GEORGE A. SISSON, M.D.
Professor and Chairman, Dept. of Otolaryngology and Maxillofacial Surgery, NWU
WALTER W. SITTLER, M.D.
Sun City
GEORGE E. STAVROS, M.D.
Phoenix
PHILLIP A. STONE, M.D.
Tucson
GEORGE A. STREZA, M.D.
Phoenix
GEORGE H. TAMIS, M.D.
Phoenix
BRENDAN D. THOMSON, M.D.
Tucson
RICHARD K. TRULUCK, M.D.
Phoenix
JOHN P. UTZ, M.D.
Tucson
NEAL A. VANSELOW, M.D.
Dean, University of Arizona College of Medicine
HAROLD M. VISOTSKY, M.D.
Professor and Chairman, Dept. of Psychiatry, NWU
ROBERT G. VOLZ, M.D.
Tucson
MR. BUDDY WOOLBRIGHT, P.A.
San Manuel
F. DARWIN ZAHN, M.D.
Phoenix
CLAUDIO ZAMORANO, M.D.
Phoenix
CHESTER R. ZEISS, M.D.
Northwestern University
CHARLES F. ZUKOSKI, M.D.
Tucson

WOMAN'S AUXILIARY

to

THE ARIZONA MEDICAL ASSOCIATION

45th ANNUAL MEETING

"Fiesta de la Primavera"

PRESIDENTS

MRS. HOWARD KIMBALL
1975-76

MRS. RAYMOND VAALER
1974-75

CONVENTION CHAIRMAN

MRS. LAWRENCE HAAS
1974-75

CONVENTION SCHEDULE

TUESDAY, APRIL 22, 1975

9:00 a.m. to 5:30 p.m.—Arts and Crafts Show Entries .... Braniff Exhibit Hall
9:00 a.m. to 4:00 p.m.—Registration .... Braniff Lower Lobby
9:00 a.m. to 4:00 p.m.—Hospitality Center .... Braniff Exhibit Hall
1:00 p.m. —ArMA House of Delegates .... Braniff Ballroom #2
Woman's Auxiliary President's Report .... Mrs. R. Vaaler
WAAMA Address .... Mrs. Lee E. Rice
FREE AFTERNOON

WEDNESDAY, APRIL 23, 1975

8:00 a.m. to 10:00 a.m.—Breakfast Panel — "The Great Debate — The Pros and Cons of Hysterectomy for Sterilization"
Discussants: William E. Crisp, M.D.
Mrs. Robert Oliver
Ralph Reis, M.D.
Moderator: Mrs. Raymond Vaaler
9:00 a.m. to 4:00 p.m.—Registration .... Braniff Lower Lobby
9:00 a.m. to 4:00 p.m.—Hospitality Center .... Braniff Exhibit Hall
9:00 a.m. to 4:00 p.m.—Arts and Crafts Show .... Braniff Exhibit Hall
9:00 a.m. to 4:00 p.m.—AMA-ERF Booth .... Braniff Exhibit Hall
SPECIAL MEETINGS
Hamer Education Loan Fund Committee
Nominating Committee

10:30 a.m. to 12 Noon—Tour of Arizona Medical Center ... 1501 N. Campbell
(meet in lobby of college of medicine using Mabel Street entrance)
12:15 p.m. —Past Presidents Gavel Club Luncheon ... Sunrise Room — Old Pueblo Club
Tucson Federal Tower Building
32 N. Stone
1:45 p.m. —Brainstorming with National Officers ... Aztec Room
(Mezzanine-Braniff)
In attendance: Mrs. Clare W. Johnson, 2nd Vice President
Mrs Lee E. Rice, Western Region Vice President
All 1975-76 State officers and Committee chairmen
All 1974-75 County officers and Committee chairmen
Any interested Auxiliary members

FREE OR SPORTS AFTERNOON
1:00 p.m.—Tennis — Tucson Racquet & Swim Club
4001 N. Country Club
Golf — El Rio Golf Course
Golf —El Rio Golf Course
1400 W. Speedway
Horseback Riding — Old Adobe Riding School
2500 E. River Road
6:00 p.m.—Buses leave for "Old Tucson" — tickets required ... Braniff Lower Lobby
6:30 p.m.—A Night in Old Tucson, steaks, dancing, fun ... Old Tucson
10:30 p.m.—Buses leave Old Tucson for Hotel ... Old Tucson

THURSDAY, APRIL 24, 1975

8:30 a.m. to 9:15 a.m.—Breakfast "Fiesta al Amanecer" and Board Meeting ... Braniff Ballroom #1
In attendance: All 1974-75 State Officers
State Committee Chairmen & Co-Chairmen
State Nominating Committee
County Presidents
Special Guest Mrs. Lee Rice
All Members Cordially Invited to Attend
9:00 a.m. to 4:00 p.m.—Registration ... Braniff Lower Lobby
Hospital Center ... Braniff Exhibit Hall
Arts & Crafts Show ... Braniff Exhibit Hall
AMA-ERF ... Braniff Exhibit Hall
9:15 a.m. to 10:30 a.m.—First General Session ... Braniff Ballroom #1
All auxiliary members are invited and urged to attend
Included in agenda: Election of Officers
11:00 a.m. to 11:30 a.m.—"Woman Alone" ... Convention Center
Speaker: Daniel O'Connell Cochise Room
12:15 p.m. to 5:30 p.m.—OLD MEXICO EXCURSION TO NOGALES, SONORA
Buses leave from Braniff Place
Box lunch served on bus
Chairmen: Mrs. George Drach
Mrs. Robert Hastings
Mrs. Vernor Lovett
7:00 p.m.—ArMPAC Reception ... Braniff Ballroom #3
8:00 p.m.—ArMPAC Banquet ... Braniff Ballroom #3
Guest Speaker: Representative John B. Conlan

FRIDAY, APRIL 25, 1975

8:30 a.m. to 9:30 a.m.—Complimentary Breakfast ... Braniff Ballroom #1
In attendance: 1974-75 & 1975-76 State Officers
State Committee Chairmen & Co-Chairmen
County President
Special Guest: Mrs. Lee E. Rice
9:00 a.m. to 12 Noon—Registration ... Braniff Lower Lobby
Hospitality Center ... Braniff Exhibit Hall
Arts & Crafts Show ... Braniff Exhibit Hall
AMA-ERF ... Braniff Exhibit Hall
9:30 a.m. to 11:30 a.m.—Second General Session ... Braniff Ballroom #1
All auxiliary members are urged to attend
Included in the agenda: Memorial Hour ... Mrs. Vernor Lovett, Chaplain
Address ... Mrs. Lee E. Rice
President's Report ... Mrs. Raymond Vaaler
12:30 p.m.—Fiesta de las Flores Luncheon ... Arizona Inn
Chairman: Mrs. Ruben Acosta 2200 E. Elm
Fashion and Art by Berta Wright, coordinated by Mrs. Jim Slone
Second General Session — continued
Included in agenda: Address by the President of ArMA
Installation of Officers: Mrs. Clare W. Johnson
Acceptance: Mrs. Howard Kimball
Immediately following luncheon ... Arizona Inn
Post Convention Board Meeting, 1975-76 Board
6:30 p.m.—Woman's Auxiliary President's Reception ... Room AO4 Braniff
Mezzanine
7:00 p.m.—President's Reception ... Braniff Pool Area
Dress: Mexican, Spanish or informal Mazzanine
8:00 p.m.—President's Banquet ... Braniff Ballroom

"Fiesta de la Primavera"

HIGHLIGHTS

TUESDAY, APRIL 22, 1975 THROUGH FRIDAY, APRIL 25, 1975

REGISTRATION .... Braniff Lower Lobby
Tuesday, 9 A.M. to 4 P.M.
Wednesday, 9 A.M. to 4 P.M.
Thursday, 9 A.M. to 4 P.M.
Friday, 9 A.M. to 12 Noon

HOSPITALITY CENTER .... Braniff Exhibit Hall
Tuesday, 9 A.M. to 4 P.M.
Wednesday, 9 A.M. to 4 P.M.
Thursday, 9 A.M. to 4 P.M.
Friday, 9 A.M. to 12 Noon

ARTS AND CRAFTS SHOW .... Braniff Exhibit Hall
Tuesday, 9 A.M. to 5:30 P.M.
Wednesday, 9 A.M. to 4 P.M.
Thursday, 9 A.M. to 4 P.M.
Friday, 9 A.M. to 12 Noon

AMA-ERF BOOTH .... Braniff Exhibit Hall

SCIENTIFIC PRESENTATIONS OF SPECIAL INTEREST
"The Great Debate – The Pros and Cons of Hysterectomy for Sterilization"
Wednesday, 8 A.M. to 10 A.M. – Breakfast served .... Braniff Ballroom #3
"Woman Alone"
Thursday, 11 A.M. to 11:30 A.M. .... Convention Center
Cochise Room

LUNCHEONS AND EXCURSIONS
Tour of Arizona Medical Center .... 1501 N. Campbell Ave.
Wednesday, 10:30 to 12 Noon – Meet in lobby of College of Medicine
using Mabel Street entrance
Past Presidents Gavel Club Luncheon............... Sunrise Room – Old Pueblo Club
Wednesday, 12:15 P.M.
Tucson Federal Tower Building
32 N. Stone
Old Mexico Excursion – box lunches on bus .... Nogales, Sonora
Thursday, 12:15 to 5:30 P.M.
Bus leaves from BraniffPlace
Luncheon – Fiesta de las Flores .... Arizona Inn
Friday, 12:30 P.M.
2200 E. Elm Street
Fashion and Art by Berta Wright

SPECIAL GUEST
Mrs. Lee E. Rice, Western Regional Vice-President
Woman's Auxiliary to the American Medical Association

THE NATIONAL ENDOWMENT FOR THE HUMANITIES

Washington, D.C.—Ethical conflicts, the rights of patients and practitioners, the purpose and limits of the medical professions and their relations to the community will be explored by practicing physicians and other health professionals in a series of seminars funded by the National Endowment for the Humanities.

Grants totalling up to $186,000 to support five separate seminars during the summer and fall of 1975 were announced by Dr. Ronald S. Berman, Chairman of the Humanities Endowment.

The program, an expansion of the series inaugurated in 1974, will bring together for a month of full-time study and discussion medical practitioners and distinguished humanists whose work has focused on problems related to medicine and health care.

Directing the seminars will be Dr. John C. Burnham of The Ohio State University, Dr. H. Tristram Engelhardt, Jr., of the University of Texas Medical Branch at Galveston, Dr. Renee C. Fox of the University of Pennsylvania, Dr. Leon R. Kass of the Kennedy Institute of Georgetown University, and Dr. William F. May of Indiana University.

The seminars will examine basic issues bearing on medical practice in their ethical, philosophical, historical, and social contexts. They will draw on case studies, a wide range of readings, and discussions. The program aims to improve the quality of leadership in medicine by broadening the perspective from which physicians and other health practitioners view their profession and society at large. "In supporting this project, the Endowment's premise is that the knowledge and insights unique to the humanities are needed more urgently than ever in the contemporary world, and that they should be made available to present and future leaders of the nation's professions."

Twelve to fifteen participants, from all branches of the health professions, will be chosen for each seminar by the individual directors in consultation with selection committees. Participants will attend tuition free and will receive a $1,200 stipend for room and board, plus reimbursement for travel costs up to a maximum of $300. They may be accompanied by members of their families, but at no increase in stipend.

John C. Burnham, Professor of History and Lecturer in Psychiatry at The Ohio State University, will direct a seminar on his University's campus in Columbus. The aim of this seminar will be to identify the particular historical forces which have shaped the medical profession and determined the direction of its development. It will attempt to sharpen the participants' understanding of their profession by studying it in the context of Western culture and how it has been involved in the forces of social change.

H. Tristram Engelhardt, Jr., a philosopher and physician who is Assistant Professor of the Philosophy of Medicine in the Institute for the Medical Humanities of the University of Texas Medical Branch at Galveston, will direct a seminar at his University's campus in Galveston. The seminar will review areas of current ethical controversy in medicine, focusing on the concept of person and its significance for medical ethical issues. It will relate such issues as rights and duties of patients and practitioners, and concepts such as the quality of life and human dignity to decision-making in medical practice.

Renee C. Fox, Professor of Sociology in the Departments of Sociology, Psychiatry and Medicine at the University of Pennsylvania, will conduct a seminar examining from a cross-cultural perspective the ways in which social and cultural forces influence certain present-day phenomena and problems in American medicine. Conceptions of health and illness, the process of professional development, the hospital as a community, modern medical research, and some ethical and existential issues in contemporary medicine are among the topics to be considered.

William F. May, Professor and Chairman of the Department of Religious Studies at Indiana University, will direct a fourth seminar which will be held on the Williams College campus. Participants will explore basic ways of interpreting human nature and obligation as they affect decisions in medical practice. The seminar will also attempt to clarify the role of the practitioner in the several areas in which he or she operates, including the doctor patient relationship, the family facing medical crisis, the decision-making ethos of the hospital, and claims of society at large.

A fifth seminar, the second to be held on the campus of Williams College in Williamstown, Massachusetts, will be directed by Leon R. Kass, Research Professor of Bioethics at the Kennedy Institute of Georgetown University. This seminar will explore fundamental questions about the nature of man and human community, and, against this background, consider questions regarding the purposes and limits of medicine. The major activity will be the close reading and discussion of two classic works of Western thought and literature, supplemented with the study of current problems in medical practice.

All requests for information and applications should be addressed to the individual seminar directors:

Professor John C. Burnham
Department of History
The Ohio State University
230 West 17th Avenue
Columbus, Ohio 43210
(614) 422-5465

The seminar will run from June 23 to July 18, 1975. The deadline for receipt of applications is April 1; selections will be announced by April 8.

Professor H. Tristram Engelhardt, Jr.
Institute for the Medical Humanities
University of Texas Medical Branch
Galveston, Texas 77550
(713) 765-2376

The seminar will run from September 8 through October 3, 1975. Deadline for receipt of applications is May 19; selections will be announced by May 30.

Dr. Leon R. Kass
Center for Bioethics
Kennedy Institute
Georgetown University
Washington, D.C. 20007
(202) 625-2362

The seminar will run from July 27 through August 22, 1975. The deadline for receipt of applications is April 1; selections will be announced by April 8.

Professor William F. May, Chairman
Department of Religious Studies
Sycamore Hall 230
Indiana University
Bloomington, Indiana 47401
(812) 337-3531

The seminar will run from June 29 to July 25, 1975. The deadline for receipt of applications is April 1; selections will be announced by April 8.

ArMA Medical History

GOATS OF ARIZONA

Dry Gulch Jake

A Goat Herder's deserted mansion

To those who collect improbable statistics you might add this one. In 1913 Dr. Robert Looney, of fair Prescott, then Secretary of the Arizona Board of Health reported that of the five states having over 100,000 goats, Arizona ranked third. The 1900 census gave it in this fashion: Texas 1,135,244; New Mexico 412,050; Arizona 246,617; Oregon 185,411 and California 138,413 goats. The same census gave the number of people in Arizona as 204,354, a few more goats than there were people. Now you can travel almost from border to border in any direction, except in Navajo Land, and never does a goat cross the road.

In the early part of 1912 Drs. Yount and Looney demonstrated conclusively that Malta Fever existed in Arizona. Amongst a group of cases presenting fever as a main symptom they found eight who proved to be positive in their blood reaction. These patients were engaged in the goat raising industry in Yavapai County and bacteriological findings were positive for Malta Fever.

I imagine that it scarcely enters into the differential diagnosis these days, but perhaps we should resharpen our attention to this disease as it still lingers around. Packing plant employees are now amongst the most vulnerable together with veterinarians and stockmen.

Some of the high points in the history of the recognition of this disease runs something as follows:

In 1814 it was recognized by Burnett on the shores of the Mediterranean as "the bilious remittent fever of the Mediterranean."

In 1886 Bruce, an Englishman isolated from the spleen of a human case in Malta an organism which was later termed B. Melitensis.

In 1895 Bang demonstrated B Abortus as a causative organism of infectious abortion in cattle.

In 1910 MacNeal and Kerr isolated it from cattle suffering from mastitis.

Possibly the first cases reported in the United States were noted in 1911, by First Lt. Thomas L. Ferenbaugh, MC, U.S. Army while stationed with troops at Del Rio, Texas. He reported these five cases from individuals who had been engaged in the goat industry in the Pecos River country, and seven other cases of Malta fever as well as having made bacteriologic investigations of the goat herds, which was the probable source of the infection. This careful scientific work enabled Lt. Ferenbaugh to announce the ultimate conclusion that Malta fever existed in Texas. This focused the attention of other medical men in the states having a high goat population on the possibility of the presence of the disease in their own communities. Drs. Yount and Southworth were thus alerted and deserve credit for making the first positive diagnoses in this state. They reported this in 1913 in the bulletin of the Arizona State Board of Health.

So far it was recognized that these diseases then existed in cattle and goats especially but remained for Alice C. Evans, in 1918, to point out that the organisms from the goat and from the cow were closely related seriologically and this test could be used, agglutination, to detect the presence of present or past disease. Experimental abortion in a cow was produced by Evans by innoculating the pregnant animal with Brucella melitensis, the caprine strain. Other investigators Carpenter and Boak isolated Brucella abortus from a human fetus, and this confirmed an earlier suggestion by another observer that there might be a rare relationship between abortion in women and cattle.

In 1924 Keefer proved a case of human infection from Brucella abortus in man and this confirmed the suggestion which was earlier made by Evans on the basis of her seriological study of human serum that cattle might be a source of Malta fever in this country. Now the whole thing was tied together and later work has shown that there are several associated organisms bovine, caprine, and porcine strains. In later times most of the attention has been devoted to the bovine reservoir of the disease since this seemed to be the source of most of the cases in the Middle West and East. A positive agglutination in a 1:80 or higher dilution of the patient's serum is strong evidence of past or existing infection with an organism of this group.

Busch and Parker reviewing the status of this disease in the United States in 1972 stated "In the United States, effective control of Brucellosis in animal population, primarily cattle, has resulted in the reduction of the number of human infections from 6,321 cases in 1947 to 231 cases in 1969. Employees in packing houses accounted for 68% of the human cases in 1969 and most of these were related to swine." They continue, "It is a preventable disease, and dependent upon the control of the disease in animals, since Brucella organisms are readily transmitted to man from natural reservoirs in domestic animals."

Arizona reported four cases in 1965-69, Texas eighty-four and Iowa the leader, with two hundred twenty six cases.

Veterinarians are still high on the list of victims, 35 cases or 3% of those reported cases for a total of 1,085 in the 1965-69 study.

The Jones-Connally Act established the State Federal Co-operative Brucellosis Eradiction Program and it was directed primarily at cattle. This was based simply upon the test and slaughter method. The farmers were identified for the infected cattle at a certain nominal rate. Between 1947 and 1961 it was estimated that the loss in the cattle industry was reduced from fifty million to twenty-five millions of dollars annually by the control program.

There may be a few of you who observed the workings of this in the Middle West on the farms in the thirties and forties at which time cattle were all tested by securing a sample of blood from the jugular veins then sending it to a central testing laboratory. During my college and early medical school days I worked in a laboratory where these tests were conducted, and also was the diener for some veterinarians who were studying the disease in swine. Along with another pre-med student, it was my great privilege to carefully observe farrowing sows and to get a sample of blood from the piglets before they nursed and then soon afterwards. This study determined that apparently the organism didn't cross the placenta because these piglets, newborn and not having nursed were immunologically negative when tested but soon became positive as they nursed the first two or three days.

The illustrious Alice Evans, who devoted so much of her time to unravelling the inter-relation of the various sub-species of this organism and its relation to this disease in man, she was hospitalized in an institution where I served as a house officer. Like so many laboratory workers of that era she had the disease. An astute medical officer thought that she might have a focus of infection since her disease had been of some years duration and had never abated, at that time there was no specific treatment available. After a D and C for chronic cervicitis her health improved rather markedly and her titer as I recall, in the succeeding months began to fall.

I understand that with Tetracycline and Streptomycin the mobidity and mortality from the disease, if properly diagnosed, is sharply reduced.

The disease is world wide and the Russian publications especially devote a great deal of attention to it even these days.

So even though you may scarcely run across a goat crossing the road, there was a time when many of them were wandering over the range in Arizona and at that time Malta Fever was very common. We are indebted to these early Arizona physicians Drs. Yount and Looney who demonstrated conclusively that Malta Fever existed in Arizona as early as 1912.

REFERENCES

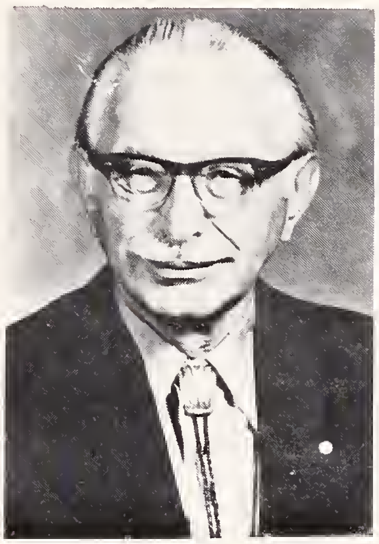
Bulletin of the Arizona State Board of Health, Vol. III, Oct. 1913 No. 3, Malta Fever in Arizona, R. M. Looney, M.D.

Textbook of Bacteriology, Zinsser & Bayne-Jones, 8th Edition 1928. The Brucella Group, p. 566-573.

Evans, Alice C., Further Studies on Bacterium Abortus and Related Bacteria. Journal of Infectious Diseases, Vol. XXII 1918, p. 576-580.

Busch, L. A. and Parker, R. L., Brucellosis in the United States. Journal of Infectious Diseases, Vol. 125, No. 3 March 1972, p. 289-294.

In Memoriam



LEO SCHNUR, M.D.
1906-1975

Paul Leo Schnur, M.D.

We came to Arizona in 1937 with the Bureau of Indian Affairs Health Service. Dad was born in New York City on January 29, 1906. He graduated from Long Island College of Medicine in 1929 and served a two year rotating internship at Zion Israel Hospital in Brooklyn receiving an award for the outstanding intern. Because of the economic situation at that time, he joined the Civilian Conservation Corps Medical Service and was stationed in New Hampshire. There he met Aileen Miller, a practicing RN in Worcester, Massachusetts. They were married on March 2, 1935. When the CCC disbanded, Dad transferred to the Bureau of Indian Affairs and was assigned to the Navajo Indian Reservation in northern Arizona. Dad was stationed at various hospitals throughout the Arizona Indian Service. My sister, Sally, was born at Tuba City Hospital.

After the war began, we moved to California where Dad served as a medical officer for the Army Medical Corps. Following the war, we returned to Sacaton, Arizona and the Pima-Papago Reservation.

In 1946 Dad bought property in Sedona-Oak Creek Canyon and built a summer home. A transfer to the Sioux Reservation in North Dakota ended Dad's Indian Service activities and he resigned to return to Arizona. He became the director of the Grand Canyon Hospital in 1948 where he remained until 1955. At that time, he felt the Sedona-Oak Creek area had need for a physician, so he established the first full time practice of medicine in Sedona. He was active on the staff of the Flagstaff Community Hospital and the Marcus J. Lawrence Memorial Hospital in Cottonwood. He practiced in Sedona until his retirement from medicine in 1969. From 1969 until his death, he thoroughly enjoyed gardening, traveling, affairs of the community and organized medicine.

During his lifetime he had many interests and avocations. Included among these were the Boy Scouts for which he was active a full 50 years. He received the Silver Beaver Award for outstanding contribution to the Boy Scouts. He was active in the development of the Shrine of the Ages Chapel at the Grand Canyon and was president of the corporation until he left the canyon. At that time, he was awarded President Emeritus of the Chapel. He was very active in community affairs and was the first chairman of the Zoning and Planning Commission of Coconino County.

Another interest of his was the Rotary Club International. He was past-president of two clubs and was a charter member of the Sedona-Oak Creek Rotary Club.

He was always active in organized medicine and was one of the charter members of the American Academy of General Practice. Among his many publications was an article on Meig's Syndrome that Ken Brilhart and I authored with him. It won the award for the outstanding article in Arizona Medicine for 1962.

He is survived by his wife, Aileen who will remain in their beautiful home in Sedona, his daughter, Sally Forster, who lives in Palo Alto, California with her husband, Mike, and their two children, Steve and Stacy, and my wife, Barbara and our three children, Sally, Polly and David.

I know I am joined by all of his family, his professional colleague and his friends from Sedona and Arizona in saying, "Leo, we'll miss you greatly. Your enthusiasm, your intense interests, your love of life and your memory will be with us forever."

Letters to Editor

January 28, 1975

John R. Green, M.D., Editor
Arizona Medicine

Dear Dr. Green:

I wish to contest a statement made by William B. McGrath, M.D., in an editorial entitled "Avocation" in the January 1975 issue of *Arizona Medicine.*

He states that "to watch a football game on television does nothing to eliminate the toxins of nervous fatigue or the tone of the musculature." He obviously is not a football fan, who may be characterized as participating in a football game via the electronic media of television. Participation must not necessarily be on the field of battle to eliminate the toxins of nervous fatigue and improve the tone of musculature.

Sincerely,
R. Michael O'Harra, M.D.

John R. Green, M.D.
Editor-in-Chief, *Arizona Medicine*
Arizona Medical Association
810 W. Bethany Home Road
Phoenix, Arizona 85013

Dear Doctor Green:

If one accepted Comments About Recertification from the Editor's Page in the January *Arizona Medicine* as an objective appraisal of the subject, then very little could be said in favor of mandatory recertification of physician specialists. Actually, there are a number of compelling reasons why mandatory recertification should be given reasonable consideration. It is true that the written, oral and practical tests that specialty boards utilize to measure applicants' qualifications for certification cannot always determine the quality of work which that physician will produce. These tests do measure whether or not that physician has the knowledge and preparation that are considered as essential for execellent performance in his specialty. With continuing conceptual advances and the increasing rate of proliferation of significant medical knowledge, periodic review of these changing prerequisites has real merit. Just as candidates for original certification are stimulated to an intensive study program in preparation for their examinations, mandatory recertification would motivate many of us older physicans to a more intensive review of the old and the new in our fields. The effect of this on patient care could only be beneficial.

Specialty boards have never pretended to be peer review bodies. The boards only measure the qualifications that they consider prerequisite; the local hospitals and medical societies rightfully should retain the function and responsibility of reviewing the quality of patient care rendered by each individual.

This reader believes that though mandatory recertification of physician specialists may have certain shortcomings, it has considerable merit to recommend it. We should expect a more objective presentation both of its merits and its shortcomings in such a reputable journal and by such an able and respected editor.

Sincerely,
Everett D. Hendricks, M.D.

EDITOR'S NOTE: Obviously Dr. Hendricks and I do not agree on this issue and I am sure that other specialists have personal opinions that may or may not agree with either of us. However, this is the purpose of an editorial page. In fact, the verbal response to my article on recertification has been received very favorably. Dr. Hendricks thoughtful letter is appreciated.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

AD HOC COMMITTEE TO REPEAL PSRO

The meeting of the Ad Hoc Committee to repeal PSRO of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, January 11, 1975, convened at 1:34 p.m., James M. Hurley, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting held October 5, 1974 were approved as distributed.

REVIEW

Board of Directors' Actions

Dr. Hurley reviewed the results of the Committee's recommendations to the Board of Directors, considered during their meeting of November 24, 1974.

IMPROVEMENTS IN EXISTING HOSPITAL PEER REVIEW PROGRAM

Arizona Hospital Association Assistance

Mr. Ron Krause, Executive Director, Arizona Hospital Association, was introduced by Dr. Hurley. Mr. Krause offered the assistance of the Arizona Hospital Association in carrying out the concept that each hospital medical staff poll its members regarding their attitudes on extra federal governmental review and further to assist in the Association's goal to support the improvement by the medical staffs of each hospital by helping them implement more comprehensive measures for evaluation of quality care.

Recommendation

Dr. Hughes reviewed recommendations for the Committee regarding implementation by the hospital committees of more comprehensive evaluation of quality care as follows:

1. Each of the usual major departmental committees of the hospital (Medicine, Surgery, OB-GYN and Family Practice) set up a list of criteria for each of the usual diagnosis reviewed by that committee. The committee should consist of at least six physicians who should individually, and preferably before the meeting, list what they consider to be necessary steps taken for adequate diagnosis and treatment of each condition, as well as the usual anticipated length of stay for uncomplicated cases. Only those points listed by all members should be included as the suggested list of criteria. Estimated length of stay would be determined by the mean of the times listed for uncomplicated cases.
2. Record room personnel should then, using this list, do periodic studies of these diagnoses, pulling each chart not meeting the criteria listed previously by the committee.
3. These charts should then be screened by the chairman of the department to determine which charts have obvious reasons and justification for a particular criterion not being met.
4. The remaining charts which do not meet the criteria and for which the chairman of the department can find no obvious justification should then be reviewed by the committee.
5. If the committee deems it necessary, they may contact the individual physician for further information.
6. If there appears to be a deficiency of a general nature, as determined by the committee, and it appears to apply to more than a limited number of physicians, some type of education program to rectify this deficiency should be instituted.
7. If it appears the majority of physicians are not meeting a specific criterion, re-evaluation of that criterion should be made by the department involved.
8. A repeat evaluation of the treatment of a given condition would then be made at a specified later date to determine the effect of the educational programs aimed at any weak spot in the diagnostic or treatment pattern.
9. If there appears to be a problem with an individual physician, the committee can take whatever action it deems appropriate.

The above broad plan:

1. Theoretically provides the mechanism of evaluating the care of every patient.
2. Sets up a means of evaluating diagnosis and treatment on a nonpartisan and consistent basis with the same criteria for evaluation applied to all cases.
3. Allows for flexibility of the criteria with such criteria being established by the physicians actually involved in each individual hospital.
4. Most of the paperwork can be done by the record room personnel, allowing the committees to zero in on specific problems rather than spend their time shuffling through most of the charts which already meet the criteria.

ACTION

It was moved and carried to recommend to the Board of Directors that the Ad Hoc Committee to Repeal PSRO be dissolved because of the Board of Director's inability to support the committee's recommendations submitted to it on November 24, 1974.

Meeting adjourned 3:15 p.m.

William E. Crisp, M.D.
Secretary
Gary L. Barnett
Associate Executive Director

FINANCE COMMITTEE

The meeting of the Finance Committee of the Arizona Medical Association, Inc. held at the offices of the Pima County Medical Society, 2555 East Adams Street, Tucson, Arizona, Saturday, January 11, 1975, convened at 2:04 p.m., Richard L. Dexter, M.D., Treasurer and Chairman presiding.

MINUTES

The minutes of the meeting held September 9, 1973 were approved as distributed.

WOMAN'S AUXILIARY

Mrs. Howard W. Kimball, President-Elect of the Woman's Auxiliary to the Arizona Medical Association, letter requesting continuation of the $1000.00 contribution was reviewed. Mr. Robinson reported that $1000.00 has been allocated in the 1975 budget for that purpose. — APPROVED.

CME FEE

The Chairman reviewed the action of the Board of Directors on 11/24/74 directing that the dues for 1976 include the $10 application fee presently required by the mandatory continuing medical education program. — RECEIVED.

HENRY & HORNE CASH FLOW PROJECTION

Mr. Robinson explained that he had asked that our auditors prepare for the committee's consideration a cash flow projection that would result in breaking even at the end of 1976 so that borrowing would not be required for operating purposes. Such report to reflect what the dues should be to accomplish the stated goal.

Mr. Sherald Griffin, C.P.A., from Henry & Horne reviewed the report in detail for the committee and responded to many questions. Alternatives were as follows:

1. Continuing as has been in the past by borrowing and billing assessments on installments. This would require a dues increase of $63.
2. Operate without borrowing from the bank. This would require a dues increase of $108.
3. Operate without borrowing from bank and collecting the building fund assessment in full annually. This would require a dues increase of $87.
4. Operate with borrowing from the bank and collecting the building assessment in full annually. This would require a dues increase of $42.

1976 BUDGET

The committee reviewed every item in the suggested budget for 1976 and took the following actions:

It was moved and carried to recommend to the Board of Directors that they reduce the educational funds provided to ARMPAC from $1500.00 to $500.00.

It was moved and carried to recommend to the Board of Directors that we not fund membership in the Arizona Council of Professions which would result in a savings of $600.00.

It was moved and carried to recommend to the Board of Directors to establish the budget for the Governmental Services Committee at $5200.00 resulting a budget reduction of $1000.00.

It was moved and carried to recommend to the Scientific Assembly Committee that they consider reducing the social functions from two (steak fry and president's banquet) to one as a cost saving mechanism.

It was moved and carried to recommend to the Board of Directors that they consider polling the membership on the question of continuing the publication of Arizona Medicine.

It was moved and carried to recommend to the Board of Directors that they recommend to the House of Delegates the following resolution as the budget for 1976. (This budget reflects the first three actions stated above and calls for a basic $50 dues increase. It also reflects the inclusion of the CME Fee in the dues structure but does not anticipate changing the present policy of giving ten years to pay off the Building Fund assessment).

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1976 be adopted: ; and be it further

	Income	Expenditures	Contingency
General Operations	$422,500.00	$310,400.00	$112,150.00
Committee Operations	–0–	57,800.00	(57,800.00)
Annual Meeting	54,000.00	53,400.00	600.00
Publishing Operations	52,300.00	69,700.00	(17,400.00)
Building Operations	17,750.00	40,000.00	(22,250.00)
Benevolent & Loan Operations	4,500.00	2,000.00	2,500.00
TOTAL	$551,100.00	$533,300.00	$ 17,800.00

RESOLVED, That the annual dues of the Arizona Medical Association, Inc., be $180.00 for Active members, with $170 going to General Operations Budget and $10 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Service member dues be $45.00, with $35 going to the General Operations Budget and $10 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Intern or Resident Active member dues be $18.00, with $8 going to the General Operations Budget and $10 going to the Publishing Operations Budget.

RENTING SPACE

Mr. Robinson reviewed a proposal for renting a portion of the basement. It was estimated that annual revenue would approximate $15,000 while cost of completing the area would be about $34,000.

It was moved and carried to recommend to the Board of Directors that permission be granted to proceed with this project.

POLICY RELATING TO TRAVEL

Dr. W. Scott Chishohlm's letter of 12/27/74 suggesting that all Association paid travel be at coach accommodations instead of first class. Considerable discussion ensued on the ramifications of this change. It was pointed out that when members are representing the Association at various meetings they do so at great financial loss to themselves by virtue of having to close their offices.

It was moved and carried to not recommend a change in the Association's present policy regarding travel.

Meeting adjourned 5:42 p.m.

William E. Crisp, M.D.
Secretary
Bruce E. Robinson
Executive Director

MAATERNAL AND CHILD HEALTH CARE COMMITTEE

Meeting of the Maternal and Child Health Care Committee of the Arizona Medical Association, held Thursday, December 5, 1974, at 810 W. Bethany Home Road, Phoenix, Arizona, convened at 7:25 p.m., Raymond J. Jennett, M.D., Chairman, presiding.

MINUTES

Minutes of the meeting of November 5, 1974, were approved as distributed.

Maternal Mortality Study

Dr. Jennett reported that the Board of Directors had approved a budget item of $1,625.00 to this committee for continuation of the maternal mortality study through 1975, as requested.

EPSDT Program for Medicaid

Dr. Friedman, Chairman of the Section on Services for Children, reported that the Board of Directors had referred the EPSDT proposal back to this committee and thhe Section on Services for Children for reconsideration with the following recommendations: 1. That there be input from the Family Physicians, Internists and Pediatricians through their specialty societies. 2. That the existing health delivery system as well as other options be included in the statement from this Association. 3. That all health personnel should be under the direct supervision of a physician. 4. That every effort should be made to involve the primary physician at the first level of access.

A revised EPSDT proposal was presented to the committee from the Section on Services for Children, incorporating the suggestions of the Board of Directors. There was considerable discussion of the new proposal. Two minor revisions were suggested by Dr. Scott for clarification. Several suggestions were made regarding inclusion of OB/GYN and Internal Medicine in the program. The following action resulted:

It was moved and carried that the Maternal and Child Health Care Committee recommends that the EPSDT proposal of the Section on Services for Children be accepted as follows and forwarded to the Arizona Department of Health Services with two recommendations: 1. That there is a need to include OB/GYN and internal medicine into planning of health services for children. 2. That either the Section on Services for Children or a similar committee be appointed to function in an advisory capacity, through the Medicaid Committee, to the Arizona Department of Health Services, and to be a continuing advisory committee.

Possible models to be considered:

The following group of models, or other physician-responsible modifications which may be developed, to be recommended for the implementation of early periodic screening, diagnosis and treatment for the Medicaid program in Arizona:

1. Physician/patient.
2. Physician/health counselor (aide/patient).
3. Physician/nurse/health counselor (aide)/patient.
4. Physician/nurse/patient.

The particular model or models to be used for the area concerned to be determined by the resources of the community and the choice of the community providers and consumers.

Functions of the Health Counselor (aide):

It was moved and unanimously carried that the Section on Services for Children feels that with proper training the health counselor or aide under the EPSDT system can perform the following tasks:

1. Initial contact — outreach within the home.
2. Screening questionnaire.
3. Anthropometric:
    - Height
    - Weight
    - Head circumference
    - Mid-arm

    All done in the clinic (the word "clinic" as herein used would also apply to private office or school, wherever the health care is being delivered) under direct supervision by a nurse.
4. Vision testing over age of 4 — clinic setting.
5. Hearing test over age of 4 — clinic setting.
6. Blood drawing — finger stick — in the clinic supervised by nurses and physician.
7. Urine screen — dip stick — in clinic.
8. Nutritional status — home or clinic.
9. Immunization status — home or clinic.
10. Supervised educational counseling — home or clinic (example of counseling: Accident prevention, nutrition, safety, parenting skills, family planning, etc.).
11. Follow along (referral and follow-up) to nurses and physicians.

Developmental Testing:

It was moved and unanimously carried that the Section on Services for Children feels that developmental testing (for example, the Denver Developmental Screening Test) could be performed by a properly trained aide.

Qualifications of the Health Counselor (Aide):

It was moved and unanimously carried that the Section on Services for Children go on record as being in favor of the following as minimal qualifications for a Health Counselor (aide) under the EPSDT program:

1. Age 18 or over.
2. Good physical and mental health.
3. Ability to communicate effectively on various levels — both verbally and in writing. Will be interviewed.

4. Ability to perform routine task assignments and understand written and oral instructions.
5. Knowledge of the area and ethnic groups of the area, and preferably ability to speak non-English languages or dialects spoken in the area, as well as English.
6. Possession of a valid Arizona operator's or chauffeur's license.

Training of the Health Counselor (Aide):

It was moved and unanimously carried that the Section on Services for Children approves the following training requirements for a Health Counselor (Aide) for the EPSDT program:

> The Health Counselor (Aide) must successfully complete a standardized course designed for their training. Training will include job-oriented tasks. The Arizona Department of Health Services will be responsible for setting standards of training. Continuing education and evaluation will be a part of the aide program.

Functions of the Nurse in the EPSDT program:

It was moved and unanimously carried that the Section on Services for Children go on record as favoring the following as functions of the Nurse in the EPSDT program for Medicaid:

1. Evaluate screening results of the aides. Rescreen abnormal. Refer to physicians where indicated.
2. Supervise the Health Counselors (Aides) in clinic and home setting.
3. Provide continuing education for the Health Counselors (Aides).
4. Participate in in-depth counseling for families.
5. Give vision and hearing testing for children under age 4 and to those children aides are not able to test.
6. Be directly responsible to the local participating physician.
7. Provide administrative supervision of aides.
8. Follow physician's instructions for treatment, guidelines for immunizations, and follow-up care.
9. Submit necessary reports in a timely manner.

Qualifications of the Nurse in the EPSDT program:

It was moved and unanimously carried that the Section on Services for Children approve the following as qualifications of the Nurse in the EPSDT program:

1. Be registered in the State of Arizona.
2. Be a qualified pediatric Nurse Associate or a Registered Nurse with additional preparation in assessment skills.
3. Be able to demonstrate competency in the skills necessary for the EPSDT program by appropriate examination.
4. Participate in continuing education and re-evaluation.

Robert Wood Johnson Foundation grant application

Dr. Jennett reported that the special task force of the Perinatal Planning Section was in the final stages of development of the application for the subject grant, and that there were two mechanisms for funding to be included in the proposal. One would be for the Arizona Medical Association Foundation to be the grantee, and the other would be for the University of Arizona to be the grantee. This dual proposal will be sent to the Foundation, who will make the final choice.

Review of Sections

Dr. Jennett reported that the Section on Data Collection and Analysis had been taken out of this committee and designated an ad hoc committee by the Board of Directors. William J. Moore, M.D., will continue as chairman of the new ad hoc Committee on Data Collection and Analysis.

Dr. Jennett pointed out that it was felt the structure of the committee, with the Sections on Service for Children, Maternal Services, and Perinatal Planning, seemed to be functioning quite successfully.

"Licensing Guidelines for Medical Care Institutions"

It was pointed out that the Arizona Department of Health Services is currently in process of preparing "Rules and Regulations for Licensing of Health Care Institutions," and several of the members expressed concern and dissatisfaction with certain of the sections dealing with obstetrical and pediatric services. It was determined that a letter should be written by Dr. Jennett to the Arizona Department of Health Services expressing the concerns of the Maternal and Child Health Care Committee. In addition the following action was taken:

It was moved and carried that the Maternal and Child Health Care Committee recommends inclusion of the guidelines of the American College of Obstetrics and Gynecology and District Eight of the American Academy of Pediatrics Committee on Perinatal Care in the "Licensing Guidelines for Medical Care Institutions" currently being prepared by the Arizona Department of Health Services.

Meeting adjourned 9:00 p.m.

Raymond J. Jennett, M.D.
Chairman

MEDICAL EDUCATION COMMITTEE

The meeting of the Medical Education Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Monday, December 12, 1974, a quorum being present, convened at 7:38 p.m., Robert E. T. Stark, M.D., chairman, presiding.

MINUTES

The minutes of meeting held September 30, 1974 were approved as distributed.

MARICOPA COUNTY ASSOCIATION FOR GRADUATE MEDICAL EDUCATION

Dr. Flood gave a status report to the Committee. The Maricopa County Association for Graduate Medical Education has not incorporated to date, however, a steering committee is working on proposed bylaws and articles of incorporation. They did have a very productive meeting with Dean Vanselow and members of the College of Medicine faculty. The overall spectrum of the Association includes undergraduate and continuing medical education as well as graduate medical education.

CONTINUING MEDICAL EDUCATION REQUIREMENTS

Mr. Barnett reported the current status of the membership in continuing medical education. There are presently 39 members of the Association who have not reported their continuing medical education activities as required. The Grievance Committee is sponsoring a meeting on Sunday, December 15 at the University of Arizona to discuss the requirements with members who have indicated an objection to the program. To date four members have indicated that they will be in attendance.

AMERICAN INDIAN SCHOOL OF MEDICINE

Dr. Taylor McKenzie, Executive Director, Navajo Health Authority, was invited to make a presentation to the Committee regarding the developments of the American Indian School of Medicine. However, Dr. McKenzie was unexpectedly called to Washington, D.C. and George Bock, M.D. presented the background developments and expectations for the immediate future.

Dr. Melick offered the following resolution for consideration of the Committee:

WHEREAS: The Navajo Nation has made application and has received certain federal monies to initiate planning and implementation of an American Indian Medical School and

WHEREAS: The University of New Mexico has recognized the value of the establishment of an American Indian Medical School by acting in the capacity of promoter and main sponsor of this endeavor and

WHEREAS: The University of Arizona has exhibited a similar interest in the early establishment of an American Indian Medical School as evidenced by the acceptance of the President of the University of Arizona an appointment as a member of the Commission dedicated to this effort and

WHEREAS: The ideals and goals of the Arizona Medical Association is to promote medical education at its highest level in order to guarantee to the citizens of the State of Arizona the very best in medical care to all individuals of the State of Arizona irrespective of race, creed or color and

WHEREAS: The Arizona Medical Association recognizes an opportunity for improving the educational opportunities of the American Indian as well as an opportunity for guaranteeing better health care among all American Indians thus making this effort one of national significance, therefore

BE IT RESOLVED: That the Medical Education Committee of the Arizona Medical Association go on record as recommending to the Board of Directors of the Arizona Medical Association an endorsement of the present efforts to establish an American Indian Medical School, however, may it also be

RESOLVED: That this endorsement carries the specific stipulation and is hereby qualified to make abundantly clear to all proponents and interested parties that such a medical school must meet each and every condition for full accreditation as is now required by certain recognized accrediting bodies of the American Medical Association, the American Association of American Medical Colleges as now necessary in any other new American medical school during its formative stages.

It was moved and carried to table consideration of the resolution.

Meeting adjourned 9:32 p.m.

William E. Crisp, M.D.
Secretary
Gary L. Barnett
Associate Executive Director

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

GOOD SAMARITAN HOSPITAL, PHOENIX
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

CLINICAL ASPECTS OF DIABETES MELLITUS

March 14, 1975
Camelback Inn, Scottsdale, AZ

SPONSOR: Arizona Diabetes Association

CONTACT:
Philip Levy, M.D.
555 W. Catalina Dr. #207
Phoenix, AZ 85013

Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education

SYMPOSIUM ON INFECTION CONTROL

March 20 & 21, 1975
Ramada Inn, Phoenix, AZ

SPONSOR: Assoc. for Infection Control,
Arizona Dept. of Health Services,
and Center for Disease Control
at Atlanta, Ga.

CONTACT:
Sonia J. Burns, R.N.
3923 S. Willow Drive
Tempe, AZ 85282

Approved for 12 required hours toward the ArMA Certificate in Continuing Medical Education.

PRESCOTT VETERANS ADMINISTRATION CENTER CONTINUING MEDICAL EDUCATION PROGRAM

1:30 p.m., Bldg. 28, V.A. Center, Prescott, AZ

March 20 — Alcoholic Treatment Unit
March 27 — Adrenal Gland
April 3 — Treatment of Overdosage, Psychotropic Agent
April 10 — Cardiac Arrhythmias Workshop
April 17 — Medical Grand Rounds
April 24 — Neurology Conference

Approved for 1½ required hours per session toward the ArMA Certificate in Continuing Medical Education.

A DAY IN GERIATRIC THERAPEUTICS

March 22, 1975
Lakes Club, Sun City, AZ

SPONSOR: Western Div. of American Geriatrics Society & Boswell Memorial Hospital, Sun City, AZ.

CONTACT: Julius Schwimmer, M.D., F.A.C.C.
13000 N. 103 Ave.
Sun City, AZ 85351

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

SCOTTSDALE MEMORIAL HOSPITAL SEMINAR #9 ADVANCES IN INTERNAL MEDICINE

March 22, 1975
Homestead Room
Paradise Valley Country Club
Paradise Valley, AZ

SPONSOR: Medical Staff, Scottsdale Memorial Hospital

Participants: James L. A. Roth, M.D.
Univ. of Pennsylvania School of Medicine
John Ward, M.D., Univ. of Utah Medical Center
Robert S. Eliot, M.D., Univ. of Nebraska Medical Center
William M. Kirby, M.D., Univ. of Washington School of Medicine

CONTACT: Roger C. Good, M.D., Director of Medical Education
7300 E. 4th Street
Scottsdale, AZ 85251

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

4th ARIZONA CONFERENCE ON RURAL HEALTH

March 24-25, 1975
Arizona Medical Center, Tucson, AZ 85724

SPONSOR: Univ. of Arizona College of Medicine

CONTACT: Andrew W. Nichols, M.D.
College of Medicine
Arizona Medical Center
Tucson, AZ 85724

Approved for 10 Elective hours toward the ArMA Certificate in Continuing Medical Education.

ELEVENTH ANNUAL ARIZONA CHEST SYMPOSIUM

April 4, 5, 6, 1975
Doubletree Inn, 445 S. Alvernon
Tucson, AZ

SPONSOR: Tucson Medical Center

CONTACT: Arizona Chest Symposium
P.O. Box 6067
Tucson, AZ 85733

4TH ANNUAL POSTGRADUATE COURSE IN PULMONARY DISEASE

April 4, 1975
Doubletree Inn, 445 S. Alvernon
Tucson, AZ

SPONSOR: Univ. of Arizona Division of Respiratory Sciences

CONTACT: Arizona Chest Symposium
P.O. Box 6067
Tucson, AZ 85733

ARTHRITIS SERVICES PROGRAM

April 5, 1975, 9 a.m.-4 p.m.
Arizona Medical Center, Tucson, AZ

SPONSOR: Arthritis Services Program, U of A College of Medicine

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 6 required hours toward the ArMA Certificate in Continuing Medical Education.

ARIZONA MEDICAL ASSOCIATION 84TH ANNUAL MEETING

April 22-26, 1975
Braniff Place Hotel and Tucson Community Center
Tucson, AZ

SPONSOR: Arizona Medical Association and Northwestern University

CONTACT:
Donald J. Ziehm, M.D.
Program Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 14½ required hours toward the ArMA Certificate in Continuing Medical Education.

VECTORCARDIOGRAPHY — A BASIC WORKSHOP

April 30-May 2, 1975
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: American College of Cardiology, Institute for Cardiovascular Diseases, Good Samaritan Hospital

CONTACT:
Alberto Benchimol, M.D.
Institute for Cardiovascular Diseases
1033 E. McDowell Rd.
Phoenix, AZ

RECENT CLINICAL ADVANCES IN DIABETES MELLITUS

May 10, 1975
U of A College of Medicine, Tucson, AZ

SPONSOR: Tucson Chapter, American
Diabetes Association

CONTACT: Alfred E. Stillman, M.D.
2122 North Craycroft Road
Tucson, AZ 85712

Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

TENTH ANNUAL MEETING
ROCKY MOUNTAIN NEUROSURGICAL SOCIETY

June 8-11, 1975
Cozumel Island, Yucatan Peninsula, Mexico

June 12-13, 1975
Post Convention Seminars, Pan-American Hotel
Merida, Yucatan Peninsula, Mexico

SPONSOR: Rocky Mountain Neurosurgical Society

CONTACT: Richard H. Moiel, M.D., Secretary
Rocky Mountain Neurosurgical Society
601 Medical Towers, 1709 Dryden St.
Houston, Texas 77025

PHYSICIANS TRAINING PROGRAM AS PART OF ARTHRITIS SERVICES PROGRAM

July 1, 1974 - June 30, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: Arizona Medical Center and
Arthritis Services Program

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ., Rm. 8403

SPONSOR: Department of Psychiatry, U of A
College of Medicine

CONTACT: Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ hours per session toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS MEDICAL & SURGICAL

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Departments of Medicine, Family Practice,
and Surgery

CONTACT: Jack D. Nestor, M.D.
Clinical Laboratory
1601 W. St. Mary's Rd.
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

REVIEW COURSE IN INTERNAL MEDICINE

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Weekly on Wednesdays, 5 p.m.-6:30 p.m.
at participating Hospitals listed below
February 5 - June 4, 1975

SPONSOR: Departments of Medicine, Good Samaritan
Hospital, Maricopa County General Hospital and
St. Joseph's Hospital

CONTACT: D. J. Crosby, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

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PHOENIX PSYCHIATRIC COUNCIL CONTINUING EDUCATION PROGRAM

September 1974 — May 1975

SPONSOR: Phoenix Psychiatric Council

CONTACT:
Robert H. Barnes, M.D.
525 N. 18th St.
Phoenix, AZ 85006

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BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

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CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

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PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

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Phoenix, AZ 85018

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MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

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Director of Medical Education
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Scottsdale, AZ

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MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
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Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

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FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

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CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

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SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

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CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St. Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

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PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
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Arizona Medical Center
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THE INSTITUTE OF HUMAN RESOURCES

presents the first symposium of its kind in Arizona

LEARNING THROUGH EXPANDING HUMAN CONSCIOUSNESS

March 21-23, 1975

Principal Speakers:

John C. Lilly, M.D., has worked extensively in biophysics, neurophysiology, neuroanatomy and electronics. A pioneer in research on the mind and learning, he has written several books, including "Man and the Dolphin," "The Mind of the Dolphin," "Programming and Metaprogramming in the Human Biocomputer," and "The Center of the Cyclone."

Barbara B. Brown, Ph.D., since 1965 has been directing the efforts of a team of researchers in the experimental physiology lab at the Veterans Administration Hospital, Sepulveda, Calif. A pharmacologist and physiologist, she recently published the book, "New Mind, New Body," in which she reports on 11 years of original research in biofeedback training.

Cary Howard, Ph.D., has specialized in human behavior as it relates to learning processes. A University of Hawaii faculty member, she has applied a number of accelerated learning techniques in the classroom. Among these have been biofeedback, hypnosis, meditation, mind development, extrasensory perception, progressive relaxation and suggestology.

SYMPOSIUM SCHEDULE

Friday, March 21 —General Session I ($4)
7:30 p.m. Phoenix College Auditorium, 1202 W. Thomas Rd., Phoenix
Introduction
Special: **An Experience in Expanding Human Consciousness through Light and Sound**
Address: **Dr. Barbara Brown, *Biofeedback — Impact and Promise for Education***

Saturday, March 22 —General Session II ($8)
9:30 a.m. Arcadia Auditorium, 4703 E. Indian School Rd., Phoenix
Introduction
Special: **Conscious Learning and Subliminal Programming**
Address: **Dr. John Lilly, *The Relationships of Belief Systems to Education***

(Lunch Break, Noon to 1:30 p.m.)

1:30 p.m. Arcadia Auditorium
Introduction
Special: **Music, Learning and Brainwave Functioning**
2 p.m. Address: **Dr. Cary Howard, *The Learning Evolution***
3:30 p.m. Summary

EXPERIENTIAL WORKSHOPS ($6 each)

Each workshop will be presented three times, running concurrently with the others. Workshops provide materials, methods, techniques and experiential sessions and are limited in size.

A — **Biofeedback and the Learning Process,** conducted by Elliott Wyloge, M.D., director of the Institute of Biofeedback and Psychosomatic Therapy, Santa Fe, New Mexico. An in-depth discussion of techniques, utilization of equipment, and application in learning environments.

B — **Methods for Expanding Human Consciousness,** conducted by Mr. Howard Tooke, director of the Institute of Human Resources, and Mr. Glen Robinson, special projects director. An introduction to a variety of methods which may be utilized in individual or group settings, developed from many sources.

C — **Techniques for Accelerating Learning,** conducted by Dr. Cary Howard. A presentation of techniques that accelerate and enhance memory, concentration, relaxation, reading, computational ability, self-image and general study skills.

Saturday, March 22 ***7 p.m.***
Sunday, March 23 ***2 p.m.***
Sunday, March 23 ***7 p.m.***

Arrangements to attend any or all parts of this symposium may be made by calling 279-4101

ABOUT THE INSTITUTE: Since 1970, the Institute of Human Resources, a non-profit educational and research project, has provided professional assistance in a number of programs including juvenile rehabilitation, general and special education, alcohol and drug rehabilitation and community services. Institute offices are located at the Paul Johnson Building, 5020 N. 20th St., Suite 105, Phoenix.

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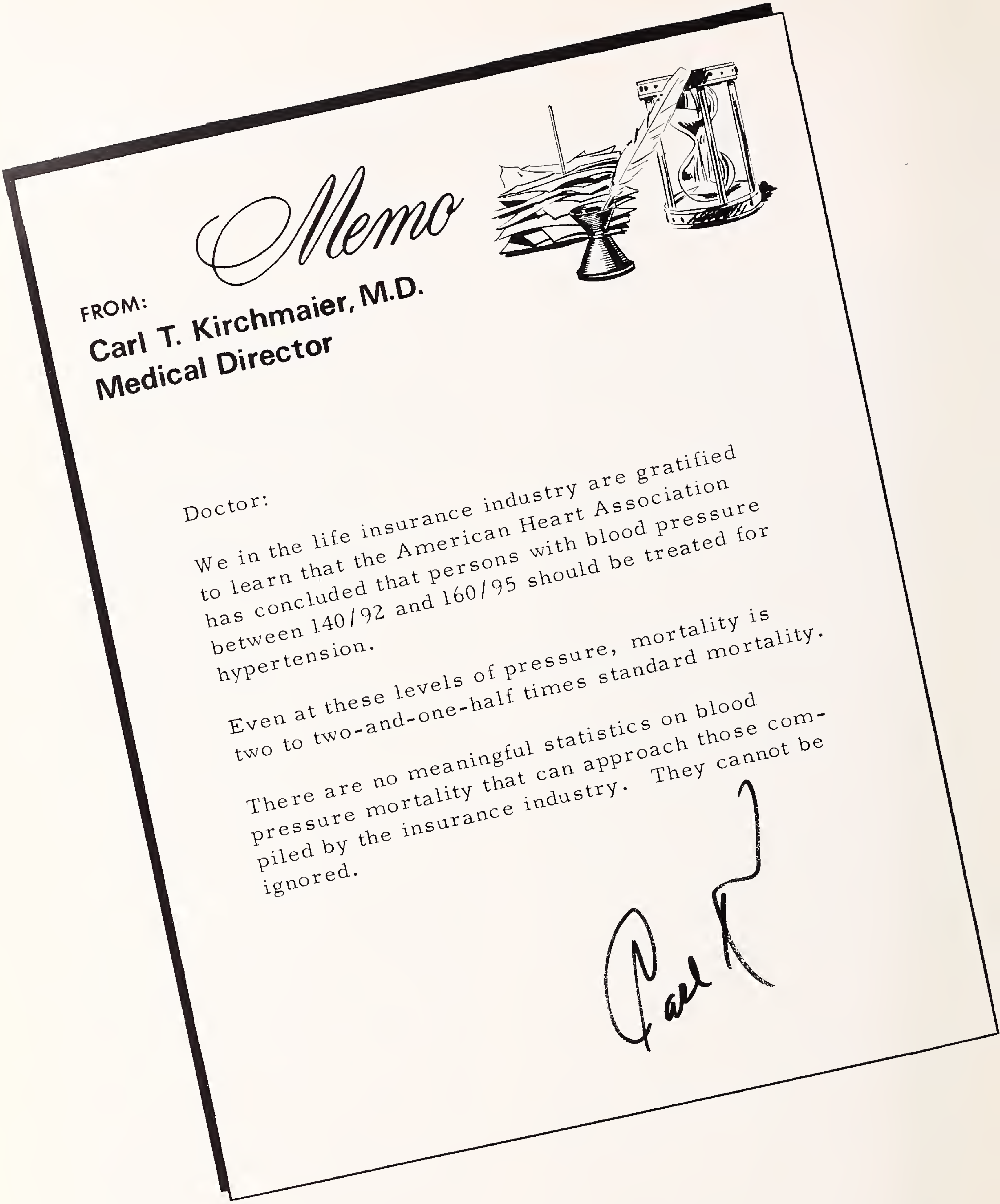

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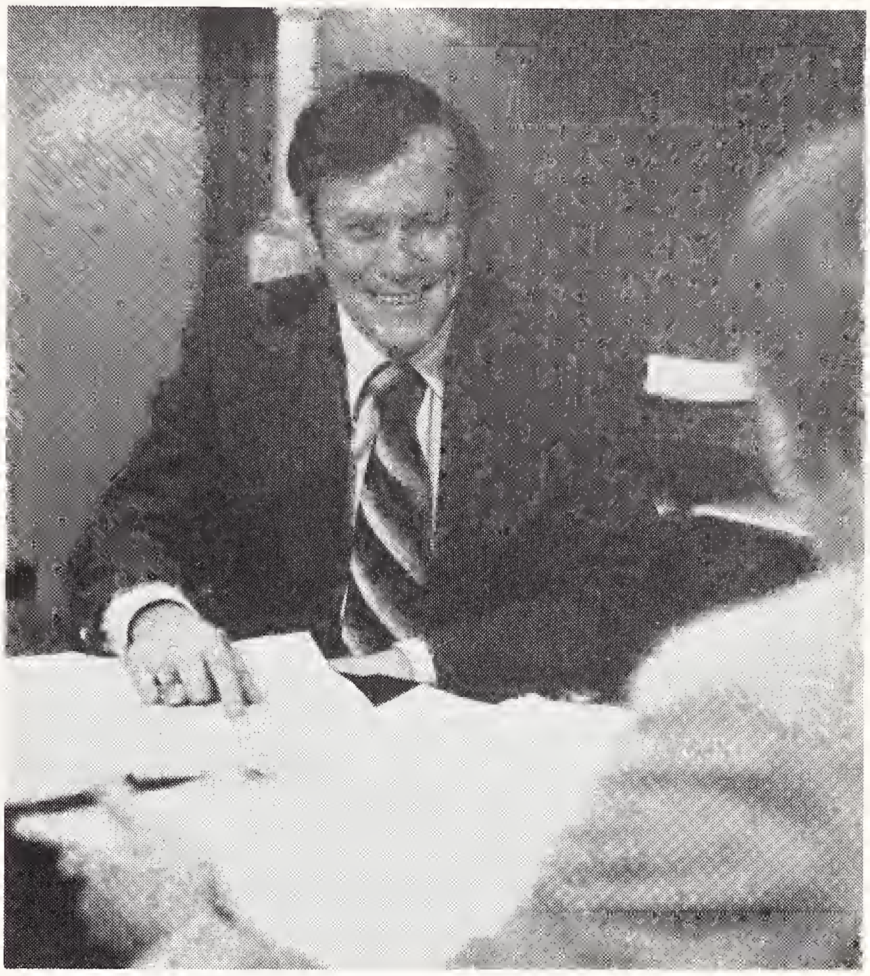

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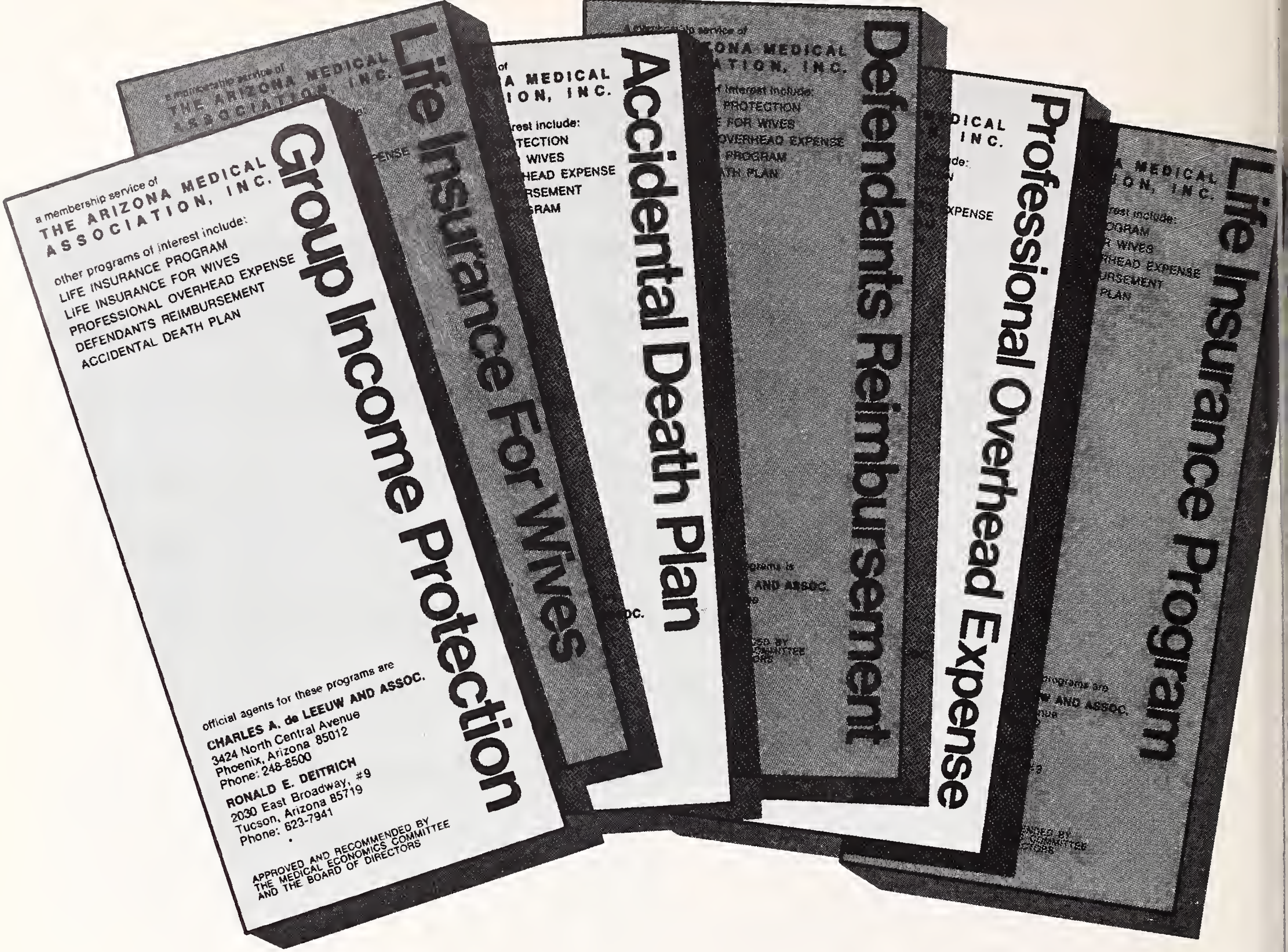

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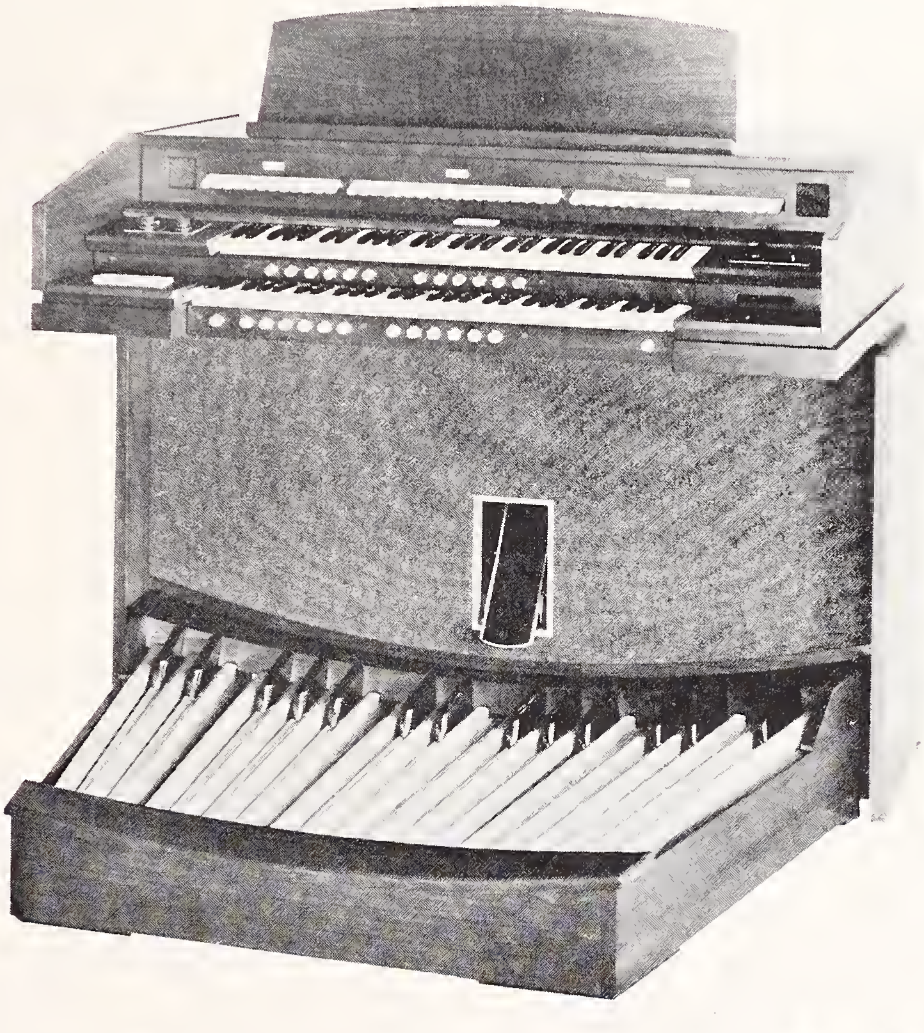

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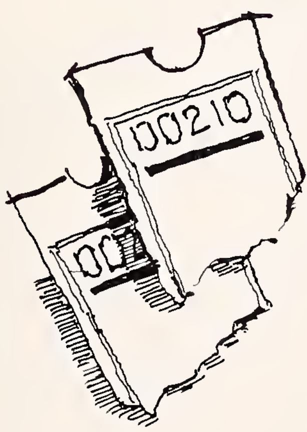

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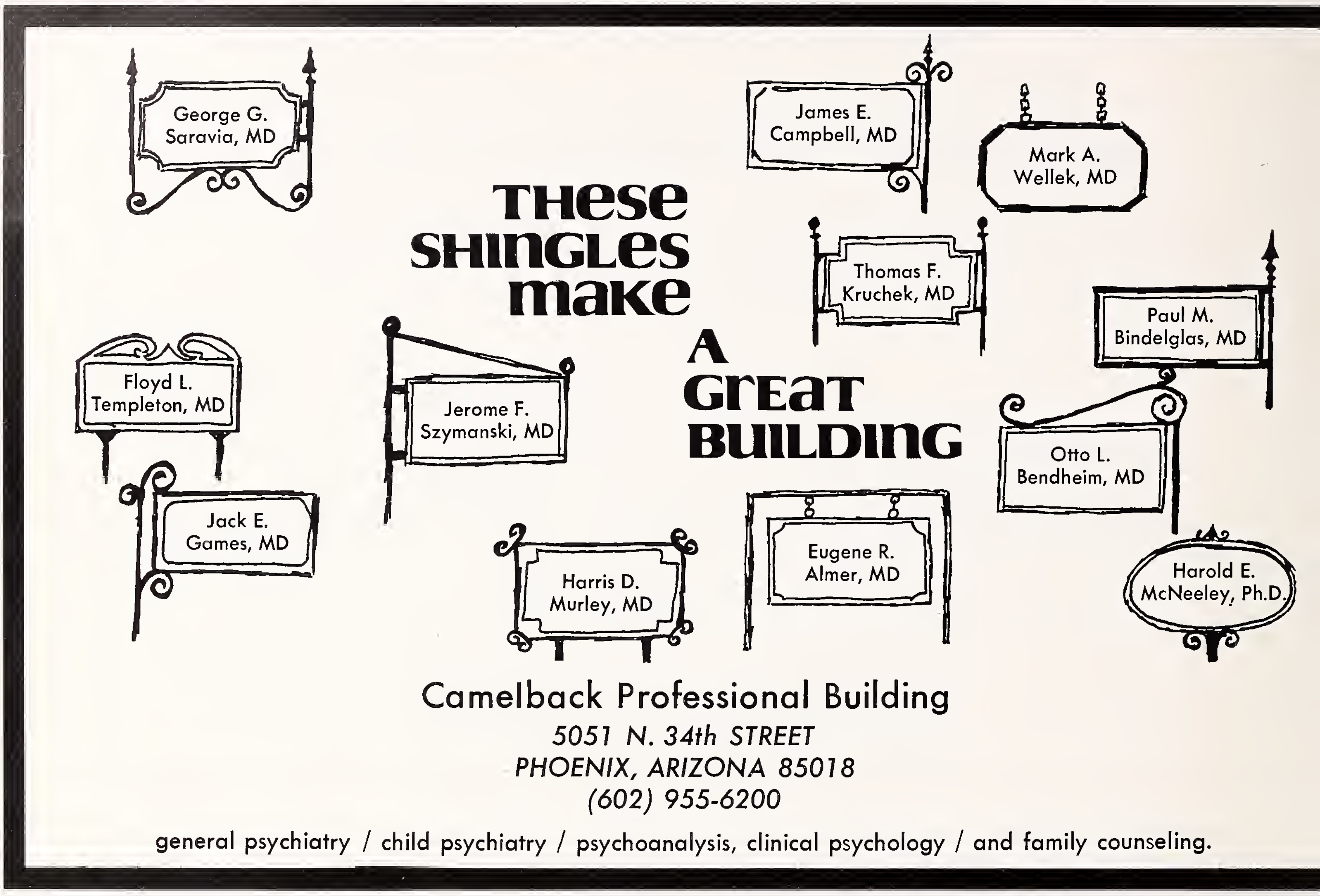

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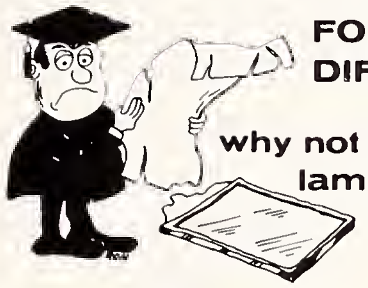

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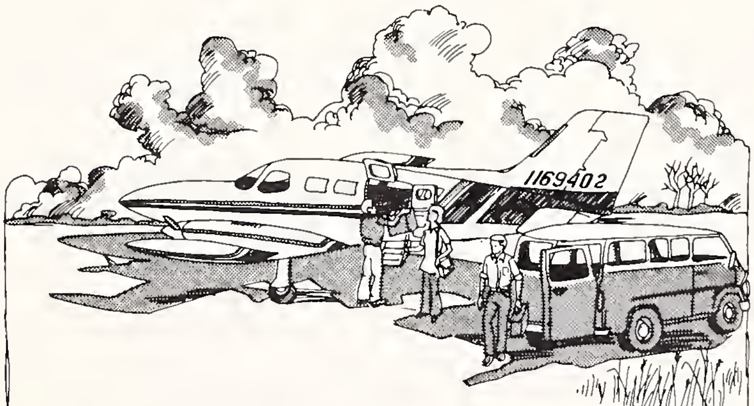

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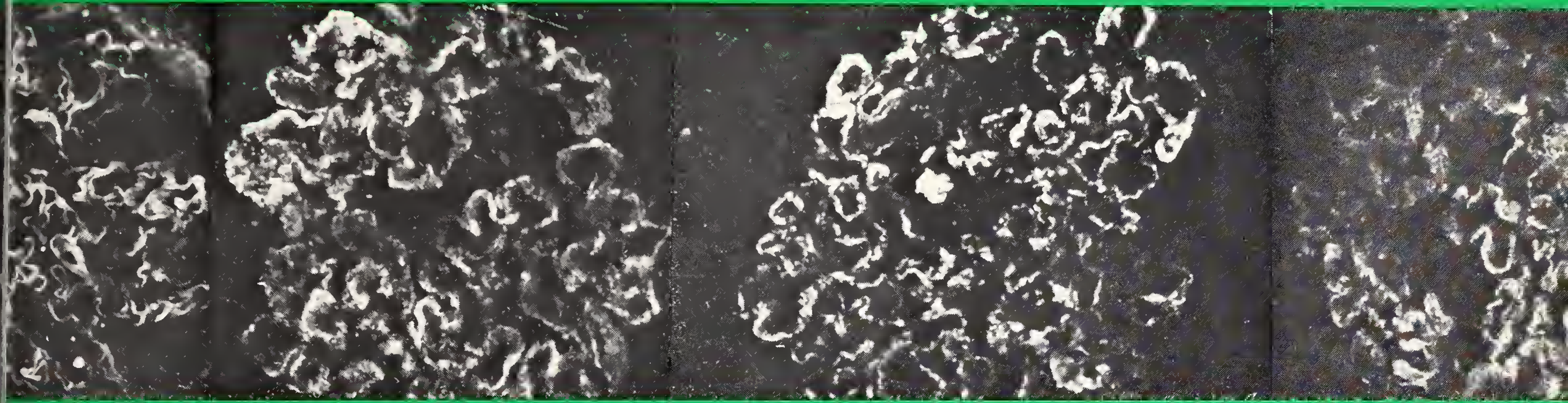

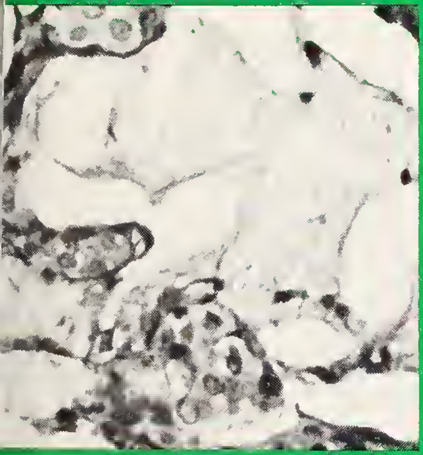

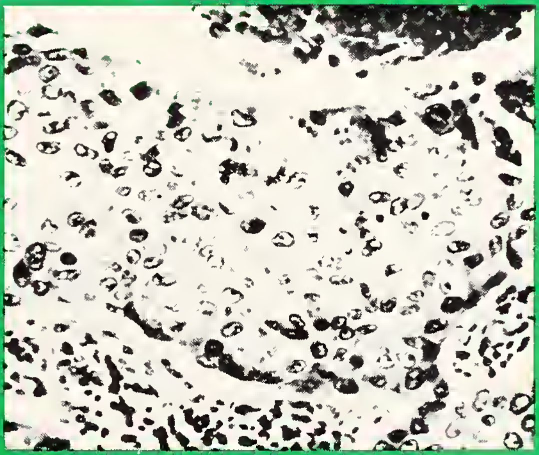

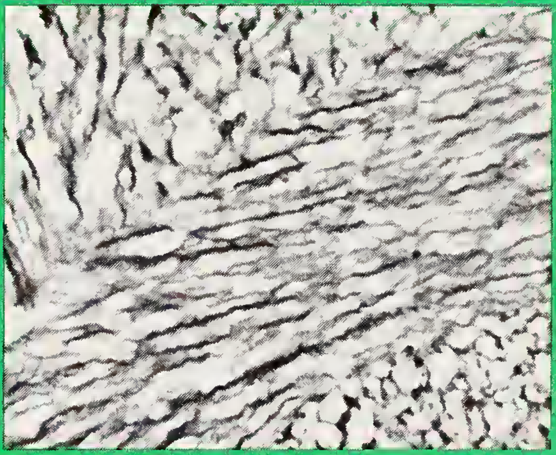

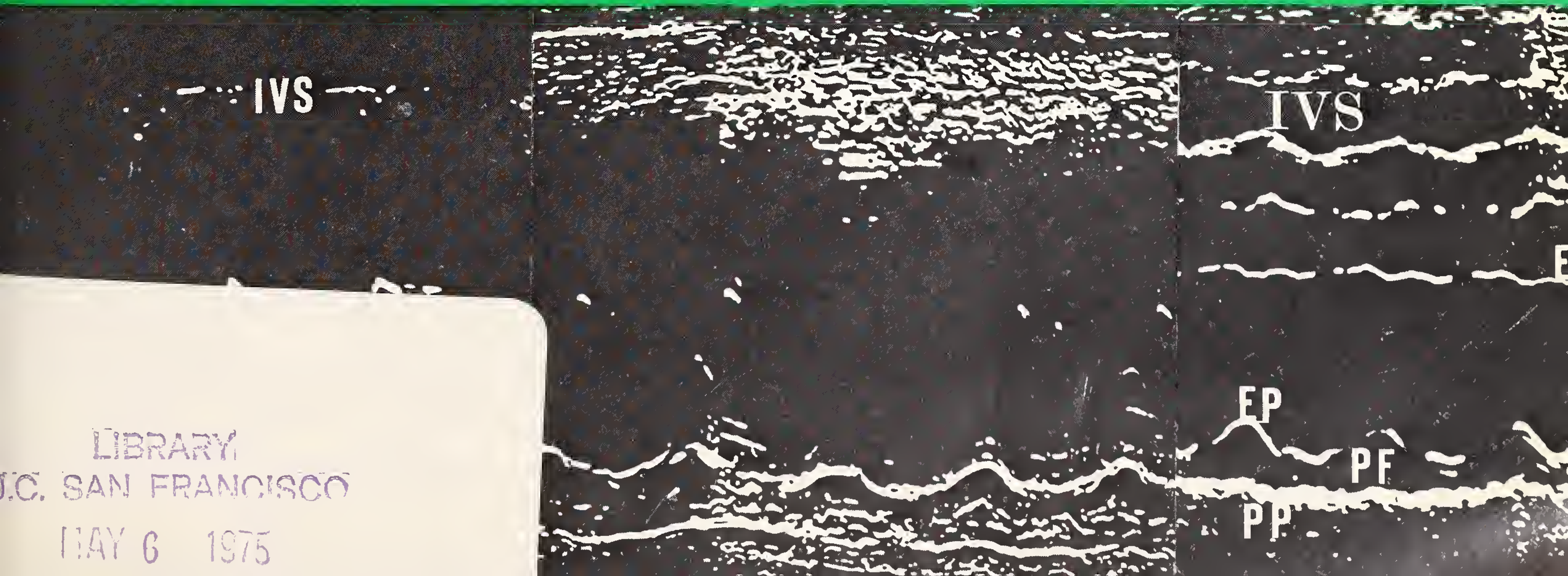

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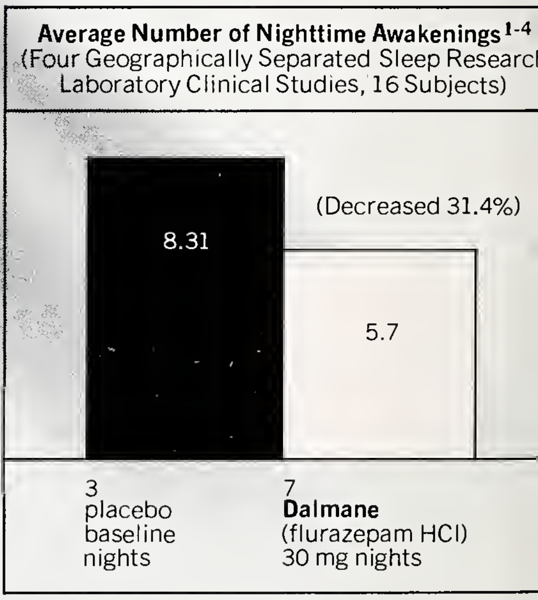
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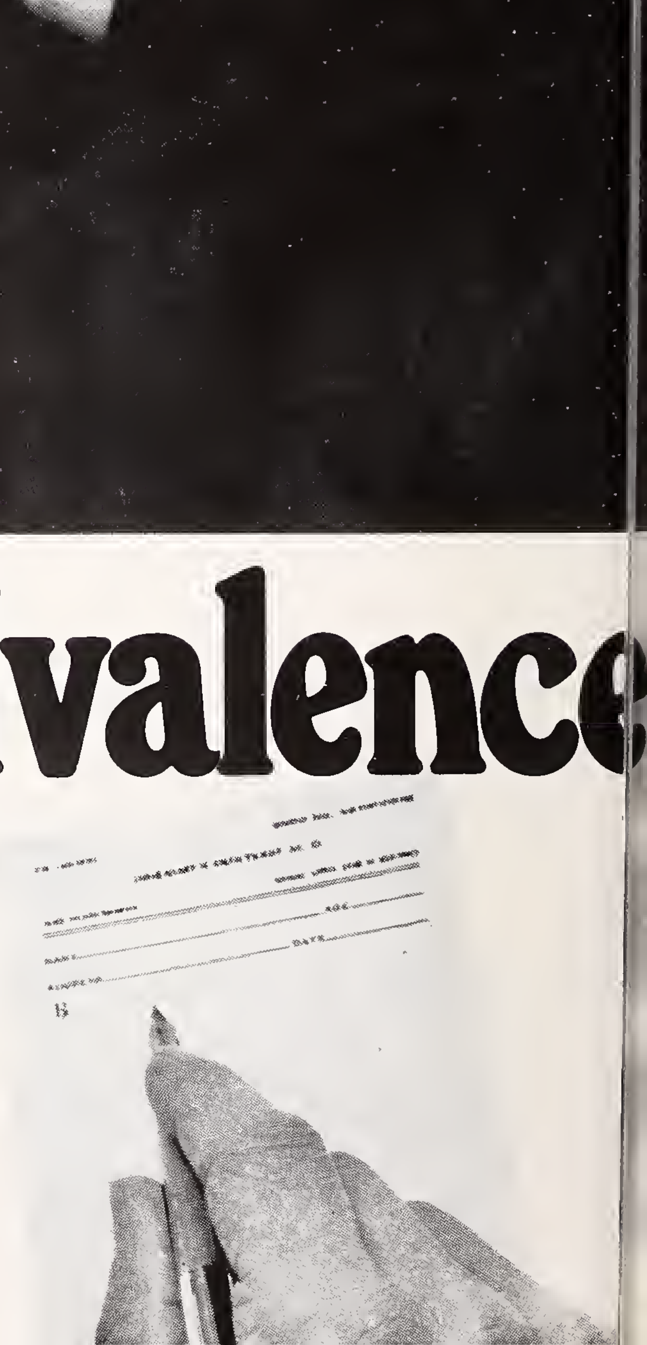
Bioequivalence



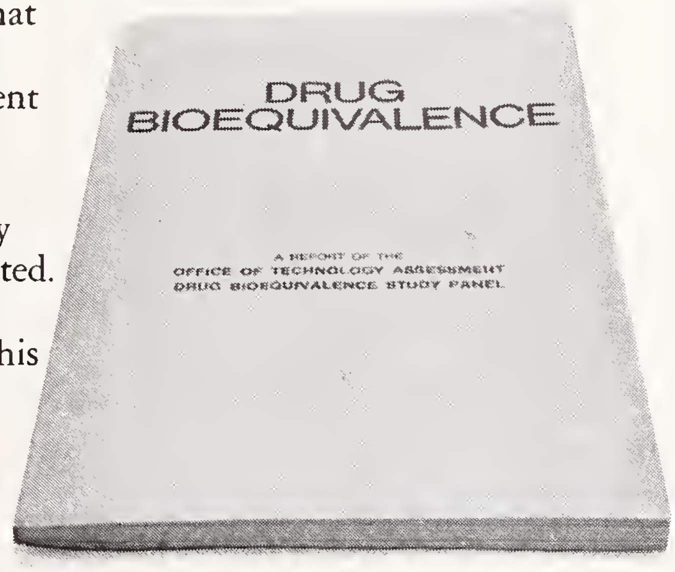
he weight of scientific opinion:

If the pharmacist substituted a
emically equivalent drug for the
e you have specified for your
atient—could you be certain of that
roduct's safety and effectiveness
mply because the chemical content
as the same?

Definitely not, unless bio-
quivalence tests and other quality
ssurance checks had been conducted.
he pharmaceutical industry and
any scientists have maintained this
osition for years, but others have
uestioned it. Now the Office of
echnology Assessment of the
ongress of the United States has
eported on the issue in its Drug
ioequivalence Study.*

Here are a few definitive state-
ents in the O.T.A. report:

"...the problem of bioinequiva-
ency in chemically equivalent prod-
cts is a real one. Since the studies in
hich lack of bioequivalence was
emonstrated involved marketed
roducts that met current compen-
ial standards, these documented in-
tances constitute unequivocal
vidence that neither the present
tandards for testing the finished
roduct nor the specifications for
aterials, manufacturing process,
nd controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.


DRUG
BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

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(c) where such validation is not possible, therapeutic equivalence.

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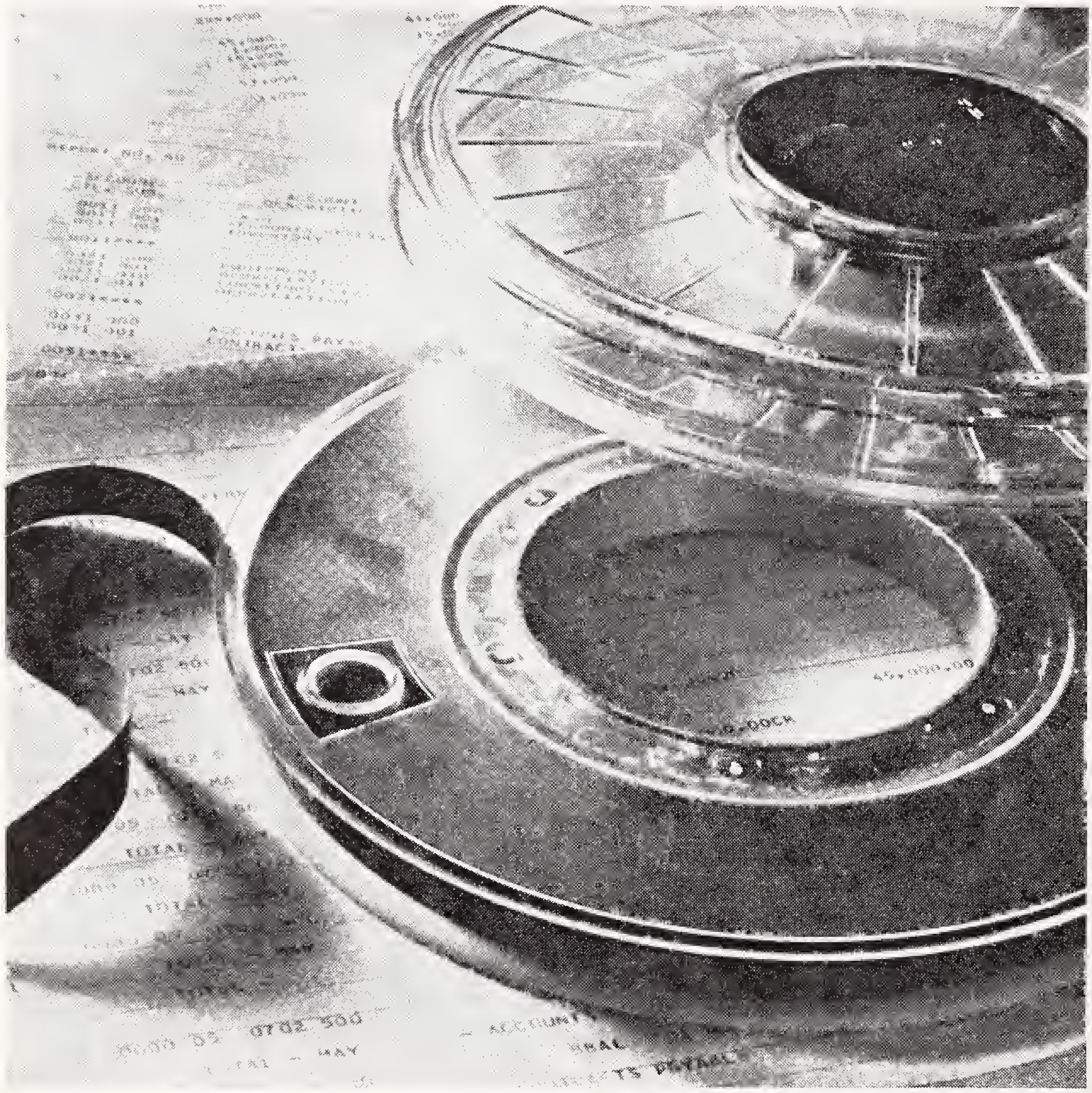

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fore prescribing, see complete prescribing formation in SK&F literature or *PDR*. The llowing is a brief summary.

dications: Edema associated with congestive art failure, cirrhosis of the liver, the nephrotic ndrome; steroid-induced and idiopathic ema; edema resistant to other diuretic ther- y. Also, mild to moderate hypertension.

ontraindications: Pre-existing elevated serum tassium. Hypersensitivity to either com- nent. Continued use in progressive renal or patic dysfunction or developing hyperkalemia.

arnings: Do not use dietary potassium supple- ents or potassium salts unless hypokalemia velops or dietary potassium intake is markedly paired. Enteric-coated potassium salts may use small bowel stenosis with or without ceration. Hyperkalemia (>5.4 mEq/L) has en reported in 4% of patients under 60 years, 12% of patients over 60 years, and in less an 8% of patients overall. Rarely, cases have en associated with cardiac irregularities. ccordingly, **check serum potassium during erapy, particularly in patients with suspected confirmed renal insufficiency (e.g., elderly or abetics). If hyperkalemia develops, substitute thiazide alone. If spironolactone is used con- mitantly with 'Dyazide', check serum potas- um frequently**—both can cause potassium re- ntion and sometimes hyperkalemia. Two aths have been reported in patients on such mbined therapy (in one, recommended dosage as exceeded; in the other, serum electrolytes ere not properly monitored). Observe patients 'Dyazide' regularly for possible blood dys- asias, liver damage or other idiosyncratic actions. Blood dyscrasias have been reported patients receiving Dyrenium (triamterene, K&F). Rarely, leukopenia, thrombocytopenia, ranulocytosis, and aplastic anemia have been ported with the thiazides. Watch for signs of pending coma in acutely ill cirrhotics. Thia- des are reported to cross the placental barrier d appear in breast milk. This may result in tal or neonatal hyperbilirubinemia, thrombo- topenia, altered carbohydrate metabolism d possibly other adverse reactions that have curred in the adult. When used during regnancy or in women who might bear ildren, weigh potential benefits against ossible hazards to fetus.

recautions: Do periodic serum electrolyte and UN determinations. Do periodic hematologic udies in cirrhotics with splenomegaly. Anti- ypertensive effects may be enhanced in post- ympathectomy patients. The following may ccur: hyperuricemia and gout, reversible itrogen retention, decreasing alkali reserve ith possible metabolic acidosis, hypergly- emia and glycosuria (diabetic insulin require- ents may be altered), digitalis intoxication (in ypokalemia). Use cautiously in surgical pa- ents. Concomitant use with antihypertensive gents may result in an additive hypotensive ffect.

dverse Reactions: Muscle cramps, weakness, izziness, headache, dry mouth; anaphylaxis; ash, urticaria, photosensitivity, purpura, other ermatological conditions; nausea and vomiting may indicate electrolyte imbalance), diarrhea, onstipation, other gastrointestinal disturbances. arely, necrotizing vasculitis, paresthesias, cterus, pancreatitis, and xanthopsia have ccurred with thiazides alone.

upplied: Bottles of 100 capsules; in Single nit Packages of 100 (intended for institutional se only).

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See brief summary of prescribing information on facing page for Indications, Contraindications, Warnings, Precautions and Adverse Reactions.

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* **Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows: "Probably" effective as an adjunct to rest and physical therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Chlorzoxazone does not directly relax tense skeletal muscles in man.

Contraindications: Sensitivity to either component.
Warnings: *Usage in Pregnancy*—Use in women of childbearing potential only when potential benefits outweigh possible risks.
Precautions: Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or any signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped.
Adverse Reactions: Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, chlorzoxazone may possibly have been associated with gastrointestinal bleeding. While PARAFLEX® (chlorzoxazone) tablets and other chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately twenty-four patients, it was not possible to state that the dysfunction was or was not drug induced.
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References: **1.** Batterman, R.C., and Grossman, A.J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L.S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4. New York, The Macmillan Company, 1970. **3.** Vickers, F.N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C.H., Jr., and Britten, A.F.H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Vernon, W.G.: Curr. Therap. Res. *14*:801, 1972. **6.** Scheiner, J.J.: Curr. Therap. Res. *14*:168, 1972. **7.** Walker, J.M.: Curr. Therap. Res. *15*:248, 1973. **8.** Data on file, McNeil Laboratories, Inc.

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CONTRAINDICATIONS: Hypersensitivity to any of the tetracyclines.
WARNINGS: Tetracycline usage during tooth development (last half of pregnancy to eight years) may cause permanent tooth discoloration (yellow-gray-brown), which is more common during long-term use but has occurred after repeated short-term courses. Enamel hypoplasia has also been reported. **Tetracyclines should not be used in this age group unless other drugs are not likely to be effective or are contraindicated.**
Usage in pregnancy. (See above **WARNINGS** about use during tooth development.)
Animal studies indicate that tetracyclines cross the placenta and can be toxic to the developing fetus (often related to retardation of skeletal development). Embryotoxicity has also been noted in animals treated early in pregnancy.
Usage in newborns, infants, and children. (See above **WARNINGS** about use during tooth development.)
All tetracyclines form a stable calcium complex in any bone-forming tissue. A decrease in fibula growth rate observed in prematures given oral tetracycline 25 mg/kg every 6 hours was reversible when drug was discontinued.
Tetracyclines are present in milk of lactating women taking tetracyclines.
To avoid excess systemic accumulation and liver toxicity in patients with impaired renal function, reduce usual total dosage and, if therapy is prolonged, consider serum level determinations of drug. The anti-anabolic action of tetracyclines may increase BUN. While not a problem in normal renal function, in patients with significantly impaired function, higher tetracycline serum levels may lead to azotemia, hyperphosphatemia, and acidosis.
Photosensitivity manifested by exaggerated sunburn reaction has occurred with tetracyclines. Patients apt to be exposed to direct sunlight or ultraviolet light should be so advised, and treatment should be discontinued at first evidence of skin erythema.
PRECAUTIONS: If superinfection occurs due to overgrowth of nonsusceptible organisms, including fungi, discontinue antibiotic and start appropriate therapy.
In venereal disease, when coexistent syphilis is suspected, perform darkfield examination before therapy, and serologically test for syphilis monthly for at least four months.
Tetracyclines have been shown to depress plasma prothrombin activity; patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage.
In long-term therapy, perform periodic organ system evaluations (including blood, renal, hepatic).
Treat all Group A beta-hemolytic streptococcal infections for at least 10 days.
Since bacteriostatic drugs may interfere with the bactericidal action of penicillin, avoid giving tetracycline with penicillin.
ADVERSE REACTIONS: Gastrointestinal (oral and parenteral forms): anorexia, nausea, vomiting, diarrhea, glossitis, dysphagia, enterocolitis, inflammatory lesions (with monilial overgrowth) in the anogenital region.
Skin: maculopapular and erythematous rashes; exfoliative dermatitis (uncommon). Photosensitivity is discussed above (See **WARNINGS**).
Renal toxicity: rise in BUN, apparently dose related (See **WARNINGS**).
Hypersensitivity: urticaria, angioneurotic edema, anaphylaxis, anaphylactoid purpura, pericarditis, exacerbation of systemic lupus erythematosus.
Bulging fontanels, reported in young infants after full therapeutic dosage, have disappeared rapidly when drug was discontinued.
Blood: hemolytic anemia, thrombocytopenia, neutropenia, eosinophilia.
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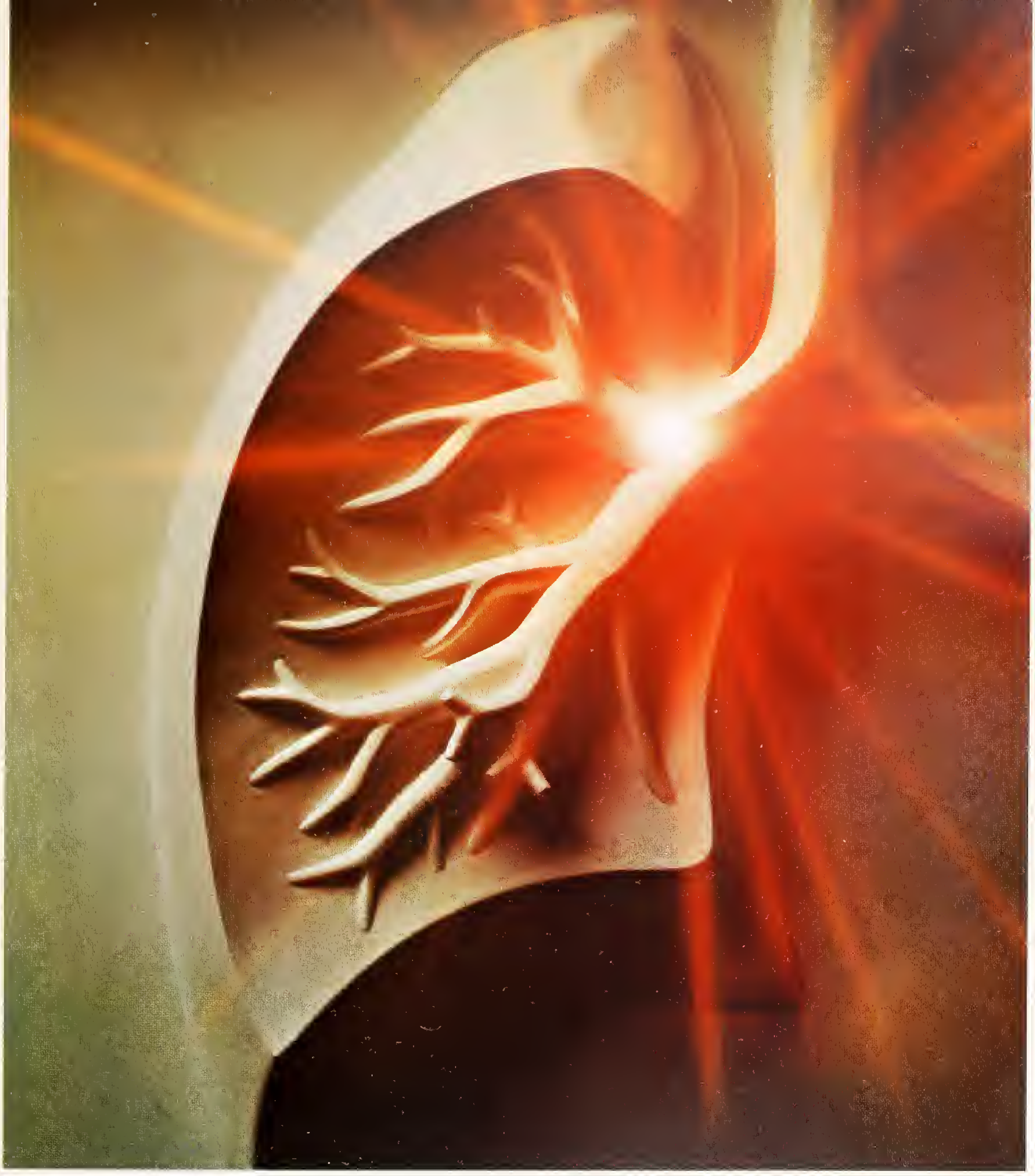

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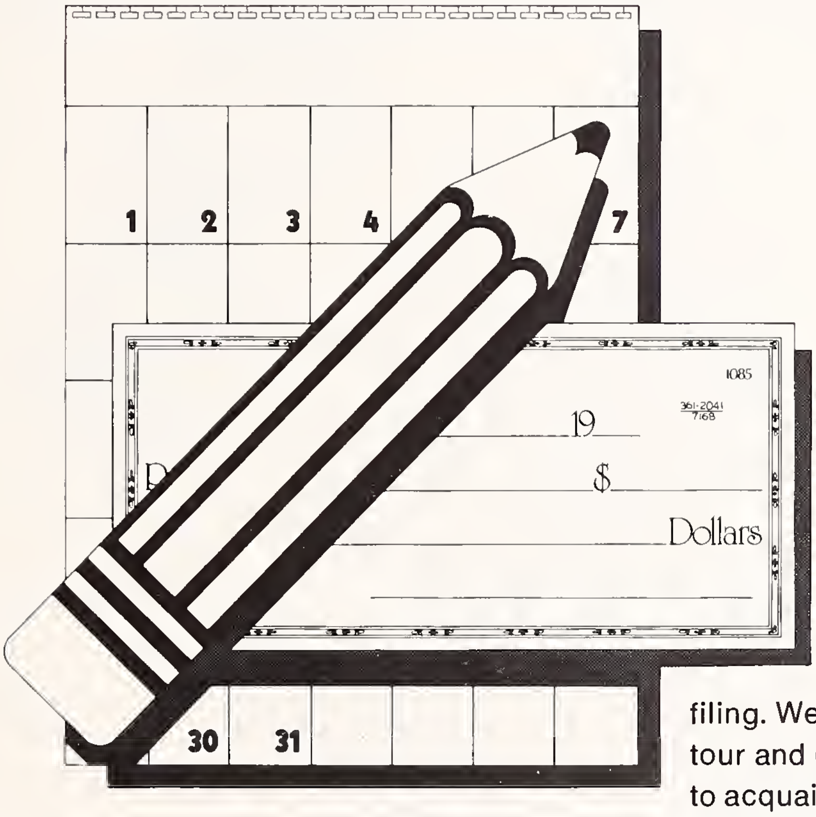

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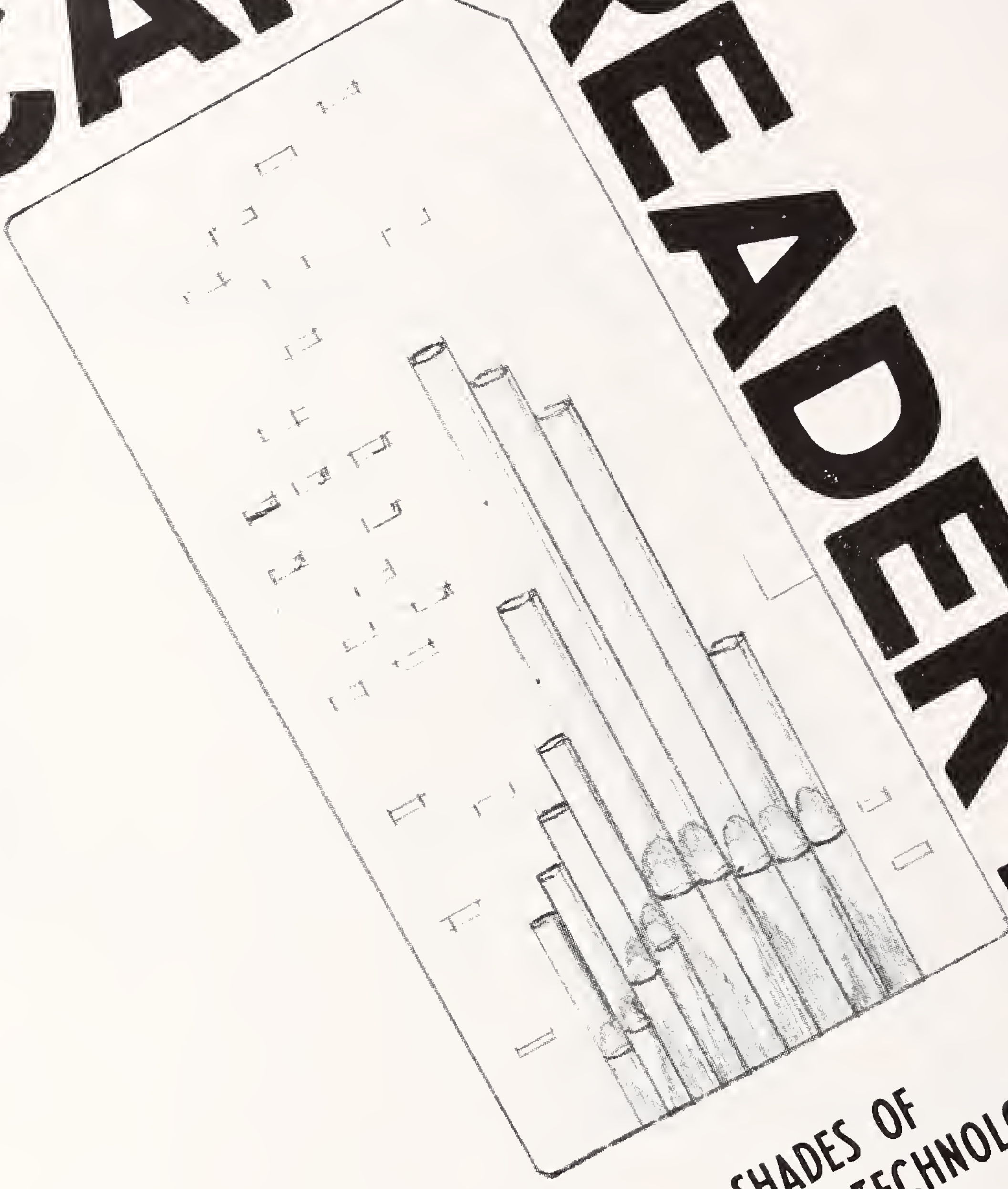

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Fat	11 grams
*Percent of calories from fat	99%
*Polyunsaturated	3 grams
*Saturated	2 grams
*Cholesterol	0 (0. per 100 grams)
Sodium	120 milligrams (865 mg./100 gm.)

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Carbohydrate	0
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**Polyunsaturated	3 grams
**Saturated	2 grams
**Cholesterol	0 (0. per 100 grams)

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Fat	11 grams
Percent of calories from fats	100%
Polyunsaturated	5 grams
Saturated	2 grams

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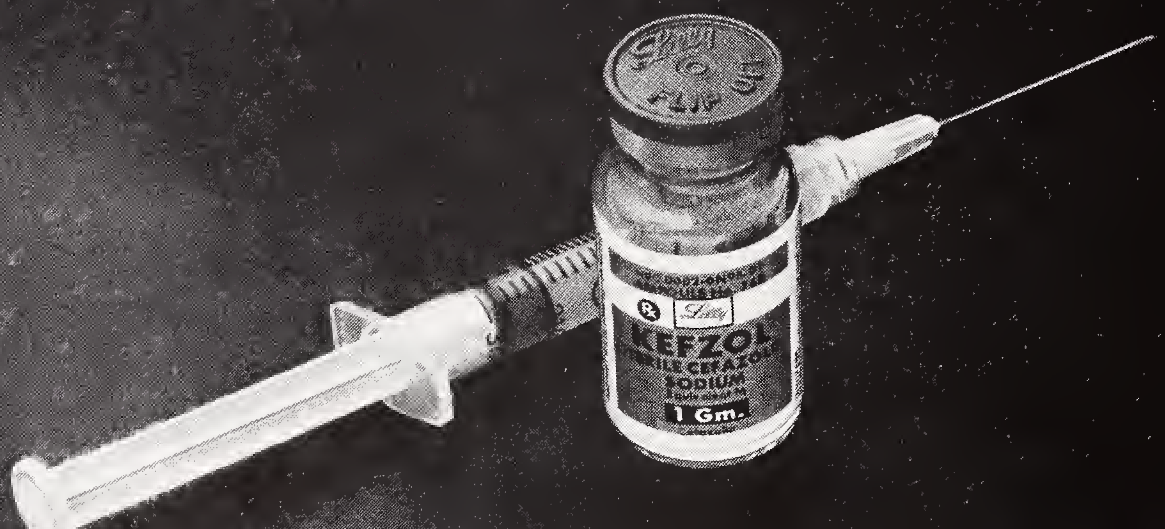

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CLINICAL APPLICATIONS OF ECHOCARDIOGRAPHY

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Echocardiography has been rapidly established as a major non-invasive tool for the diagnosis of various forms of cardiac disease. It was only 20 years ago that Edler and Hertz made their original observations on the "cardiac ultrasound" characteristics of the mitral valve.[1-4] Widespread use and development of echocardiography in cardiology was catalyzed by Feigenbaum's work in 1965, which demonstrated the utility of this technique for detecting pericardial effusion.[5] Numerous reports of new applications have appeared in the literature since that time. The purpose of this communication is to highlight some of the current established data which make this technique so valuable to the clinician.

METHOD AND ANATOMIC RELATIONSHIPS

The patient undergoing this procedure lies either recumbent or turned slightly to his left with the head of the bed elevated approximately 15 degrees. A standard limb lead of the electrocardiogram (ECG) and frequently a phonocardiogram (PCG) are recorded simultaneously with the echocardiogram to serve as reference points. The echocardiograph transducer is placed to the left of the sternum in the third to fifth intercostal spaces, where it sends a pulsed ultrasonic beam at a frequency of several million cycles per second (mega-Hertz). The same transducer acts as a receiver for reflected ultrasound waves which are registered as echoes on the oscilloscope and then further modified for display on a strip chart recorder.

The ultrasound beam forms a narrow cylinder which detects only a small section of the heart at a particular moment. For example, in position 4 (figure 1B) the display will show echoes from the anterior chest wall, anterior right ventricular myocardium, anterior aorta, tips of the aortic cusps, posterior aorta, and finally, the posterior left atrial wall. Since echoes are produced pri-

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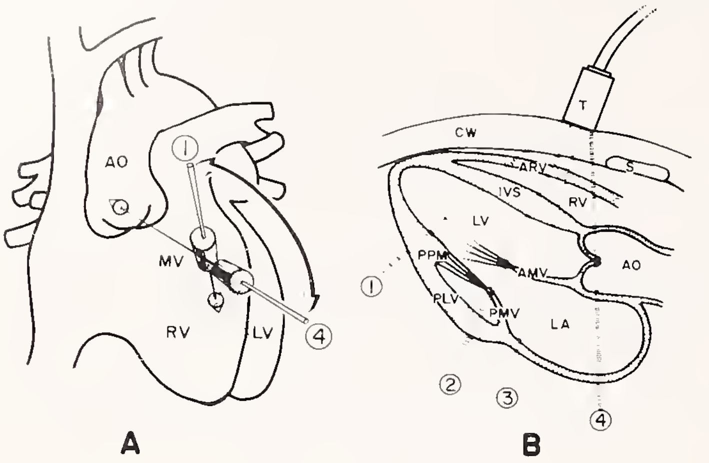

Figure 1
A. The transducer arc from the apex to the base of the heart (frontal projection).
B. Modified sagittal cross section of the heart demonstrating structures through which the transducer beam passes in various positions. AO = aorta. MV = mitral valve. RV = right ventricle. LV = left ventricle. CW = chest wall. ARV = right ventricular cavity. ARU = anterior right ventricular wall. RUC = right ventricular. IVS = interventricular septum. PPM = posterior capillary muscle. PLV = posterior left ventricular wall. LA = left atrium. AMV = anterior mitral leaflet. PMV = posterior mitral leaflet. (From Feigenbaum: Cinical application of echocardiography. Prog. Cardiov. Dis. 14:531, 1972. Published with the permission of Leaf & Febiger.

marily by interfaces and higher density structures, the cardiac chambers will appear as echo-free spaces. By tilting the transducer on the chest wall, a different set of echoes will appear. In position 2 (figure 1B) the display will show echoes originating from the chest wall, anterior right ventricular wall, interventricular septum, tips of the anterior mitral leaflet (AMV) and posterior mitral leaflet (PMV), and finally the left ventricular posterior wall (PLV).[6]

Figure 2 is a portion of a normal echocardiogram which was obtained in position 2. Recognizable patterns emerge when the echoes from the stationary transducer are displayed against time. The ECG serves as a reference for systolic and diastolic events. The chest wall and right ventricular echoes are frequently difficult to separate (as in this example) because of the proximity and densities of the two structures. The right ventricular cavity (RV) appears as a relatively echo-free space. The next structure recorded is the interventricular septum (IVS). Beneath the septum is the M-shaped configuration of the anterior leaflet of the mitral valve (AMV). The posterior mitral leaflet (PMV) is seen beneath the AMV and represents a mirror image of the latter structure with smaller amplitude. Echoes from the left ventricular posterior wall (LVPW) are found behind the mitral valve. Dense echoes posterior to the heart represent the lung and other mediastinal structures. During ventricular systole, the interventricular septum normally moves posteriorly (downward) as the left ventricular posterior wall moves anteriorly. The centimeter depth scale to the left of the tracing (figure 2) serves as a reference for estimating septal thickness, left ventricular free wall thickness, and various cardiac chamber sizes by comparison with well-establishehd normal values.[7] The systolic and diastolic left ventricular internal dimensions (arrows in figure 2) can be used to calculate cardiac output[8-17] with a fair degree of accuracy.

Some knowledge of the hemodynamics of mitral valve motion is essential to understanding its varied echocardiographic representations in disease states. During the rapid ventricular filling phase of diastole, the mitral leaflets open maximally (figure 2) and in opposite directions (the E point).[2,3] Just before atrial contraction, the mitral valve leaflets drift together to a semi-

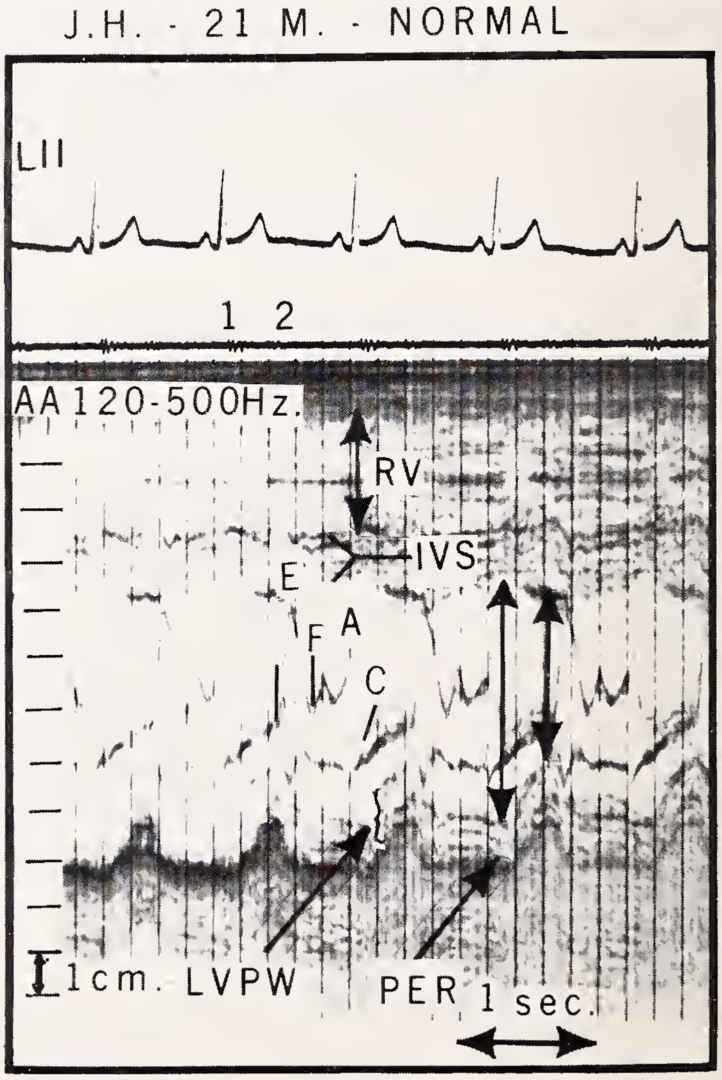

Figure 2
Simultaneously recorded lead II (LII) of the ECG, aortic area (AA) phonocardiogram and echocardiogram in a normal 21-year-old male. (PER = posterior pericardium.) See text for description.

closed position (the F point). With atrial contraction, the valve reopens, but sub-maximally, (the A point). Coincident with the onset of isovolumic ventricular contraction, the valve closes completely (the C point). During ventricular systole the normal motion of the mitral annulus carries the echoes from the closed mitral valve in a smooth, anteriorly-directed line (C-D).

The aorta is seen as dual parallel echoes containing a box-shaped structure which represents two of the aortic cusps during ventricular sytole. Figure 3 represents a normal aortic tracing in a patient with mitral stenosis. The rectangular structure represents opening of the aortic valve during systole and can be seen between echoes representing the anterior and posterior aortic walls. The left atrial diameter can be determined accurately in this position by measuring the distance between the posterior aortic wall and left atrial wall as indicated by the vertical arrow in figure 3. Normally the left atrial dimension and the aortic root dimension are equal. In this patient the left atrium is enlarged.

Figure 4 demonstrates a typical motion scan ("M-scan") produced by gradually tilting the transducer on the chest wall in an arc from the base of the heart toward the left ventricular apex. With the transducer angled medially and superiorly, one detects the aorta, aortic valve and left atrium. Arcing the transducer laterally and inferiorly permits identification of the superior aspect of the left ventricle and mitral valve. Further tilting of the transducer toward the left foot results in an echo scan which demonstrates normal tapering of the ventricle toward the apex. If the scan is performed properly, the anterior aortic echoes are continuous with the interventricular septum and the posterior aortic echoes become the anterior leaflet of the mitral valve. Establishing this continuity is especially important in pediatric echocardiography where, for example, in truncus arteriosus, double outlet right ventricle, or d-transposition, there would be loss of the normal continuity.[7, 18, 19]

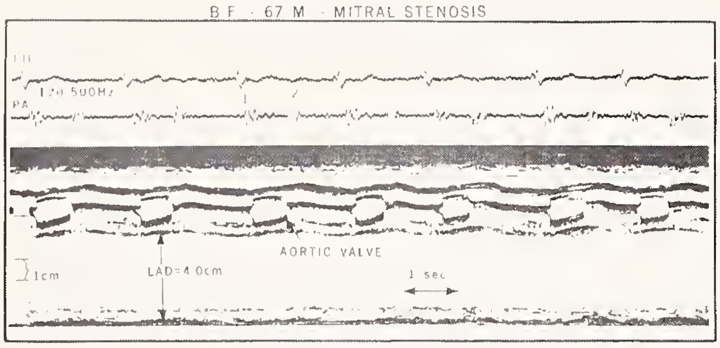

Figure 3
Simultaneously recorded LII of the ECG, pulmonic area area (PA) phonocardiogram and aortic area echocardiogram in a 67-year-old man with mitral stenosis. Note the box-like aortic valve configuration during ventricular systole. (1 = first heart sound, 2 = second heart sound.)

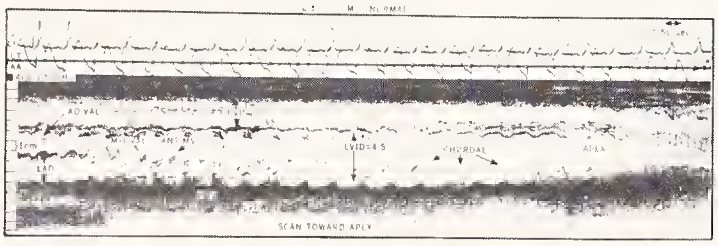

Figure 4
Simultaneously recorded LII of the ECG, external carotid artery pulse tracing (CT), aortic area (AA) phonocardiogram and motion scan from the aorta to the left ventricular apex of a normal 37-year-old man. Note the variety of intracardiac structures detected by the M-scan. (RVD = right ventricular diameter. LVID = left ventricuar internal dimension.)

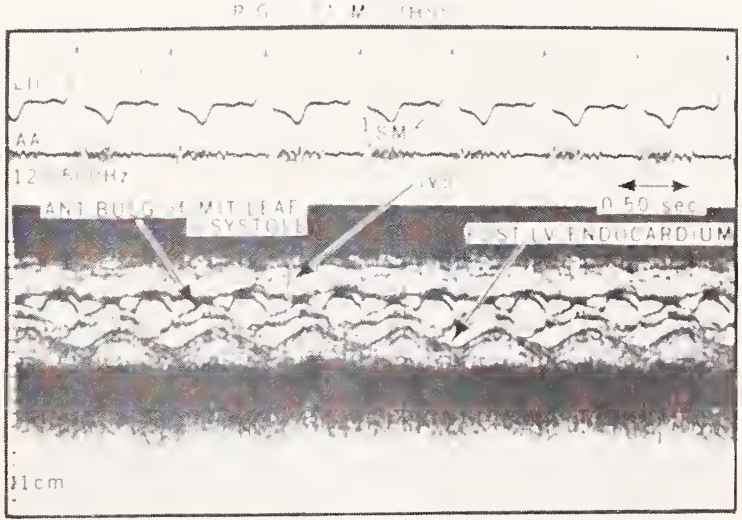

Figure 5
LII of the ECG, AA phonocardiogram and mitral valve echocardiogram in a 21-year-old male with IHSS. Note the characteristic anterior bulging of the anterior mitral leaflet during ventricular systole. The leaflet comes in contact with the interventricular septum (IVS) coincident with the appearance of a systolic murmur (SM) on the PCG.

REPRESENTATIVE DISEASE PATTERNS

In typical idiopathic hypertrophic subaortic stenosis (IHSS), the interventricular septum is hypertrophied, particularly near the left ventricular outflow tract. This distorted anatomy causes the anterior mitral leaflet to bulge toward the interventricular septum thereby adding to the sub-valvular systolic obstruction. The echocardiographic features of IHSS include: anterior systolic bulging of the mitral valve, disproportionate hypertrophy of the interventricular septum in relationship to the posterior left ventricular wall in a ratio of >1.3:11, and frequently, a small left ventricular cavity with a diminished mitral

E-F slope (figure 5).[20-22] Henry et al[23] have established a fairly good correlation between the duration and the degree of anterior mitral bulging on echocardiography with the intracavitary gradient at cardiac catheterization in patients with IHSS. Frequently the aortic valve leaflets can be seen to partially close in middle or late systole on the echocardiograms of patients with IHSS. This abnormal motion corresponds to a sudden decrease in flow across the valve produced by the sub-valvular obstruction (figure 6).[20-24]

In the prolapsing mitral valve syndrome, the mitral valve has usually undergone myxomatous degeneration, is enlarged and has redundant chordae. One or both of the leaflets may prolapse into the left atrium during ventricular systole thereby frequently producing mitral insufficiency. DeMaria et al[25] recently demonstrated three echocardiographic patterns associated with this syndrome. The classic pattern, described by Dillon et al,[26] is a mid or late sytolic posterior buckling of the posterior leaflet (figure 7). Other patterns include "anterior mitral collapse" and the "pan-sytolic bowing" configuration (figure 8).[25] Diagnosing this disease represents one of the best current applications of echocardiography, since the syndrome of click-murmur-prolapse and electrocardiographic changes is seldom complete. Most patients simply present with only one or two of these signs and may have been misdiagnosed in the past as having rheumatic heart disease or coronary artery disease.

Calcific aortic stenosis is characterized by multiple disorganized echoes filling the aorta.[27] The aortic valve may sometimes be seen as an abnormally small box-like structure which reflects narrowing of the orifice (figure 9). Although it may be difficult to quantitate the valvular gradient from the echocardiogram, echocardiography is extremely helpful in either confirming the diagnosis or separating patients with valvular aortic stenosis from those with other types of systolic outflow obstructions, including IHSS and discrete membranous sub-aortic stenosis.[7] In younger individuals with relatively non-calcified aortic valves, bicuspid aortic valves may be identified. In these patients the line produced by the closed aortic valve during diastole may be eccentrically placed in the aorta.[28]

When aortic insufficiency is present, the regurgitant aortic jet may strike the anterior leaflet of the mitral valve, causing a low amplitude fluttering. This fluttering provides a mechanism which may elucidate the so-called "Austin-Flint rumble" sometimes associated with this condition (figure 10). In severe aortic insufficiency

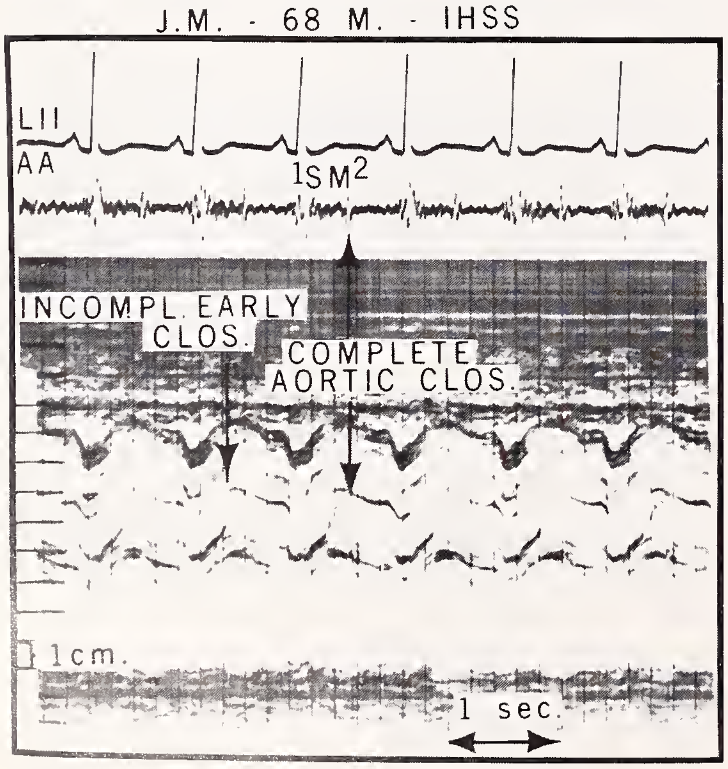

Figure 6
Simultaneously recorded LII of the ECG, AA phonocardiogram and aortic echocardiogram in a 68-year-old man with IHSS. Note the partial closing of the aortic valve prior to termination of ventricular systole.

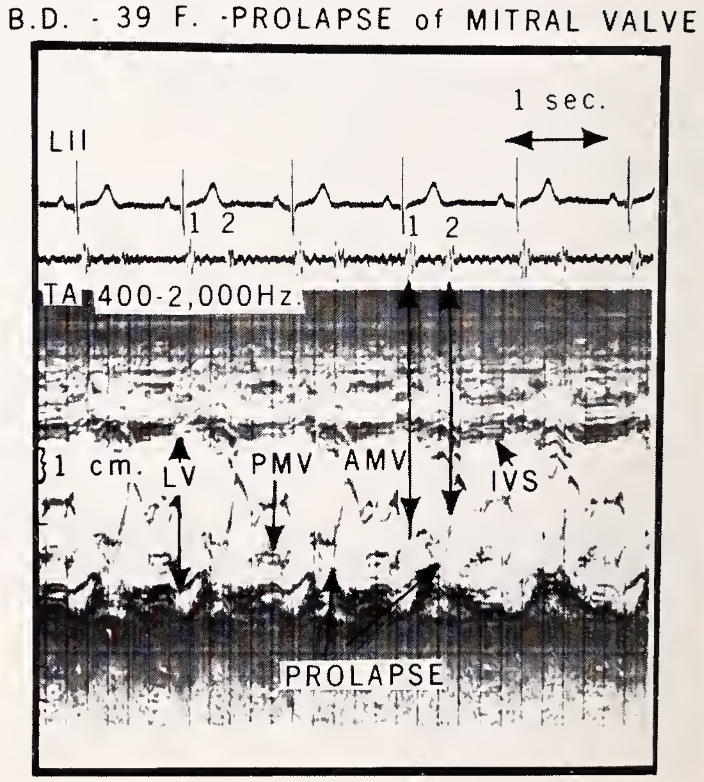

Figure 7
LII of the ECG, tricuspid area (TA) phonocardiogram and mitral valve echocardiogram in a 39-year-old woman with prolapse of the mitral valve leaflets. Note the late systolic bowing of the AMV and PMV.

and especially in acute cases associated with bacterial endocarditis or ruptured sinus of Valsalva, the regurgitant jet is so forceful that it precludes the normal reopening of the mitral valve produced by atrial contraction. This pattern results in premature mitral valve closure and a loss of the A wave on the echocardiogram.[7]

Diagnosis and assessment of mitral stenosis represents a major advantage of echocardiography. [1-4] In addition to establishing the diagnosis of mitral stenosis, it is possible to estimate the mitral valve gradient, the pliability of the valve, and the presence of calcium, all of which are important when considering mitral valve replacement versus commissurotomy.[6] The most important echocardiographic feature of mitral stenosis is an abnormal anterior movement of the posterior mitral leaflet during diastole (figure 11). A combination of valve thickening, abnormal annulus motion, and resistance to left ven-

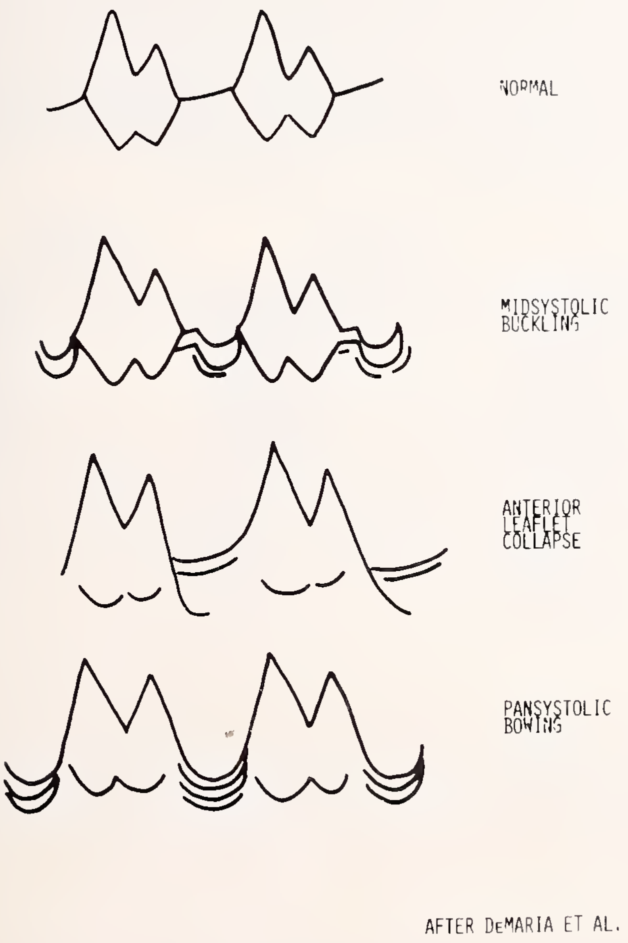

Figure 8
Line drawings illustrating a normal mitral valve echocardiogram and the three echocardiographic patterns associated with prolapse of the mitral valve. (Reproduced from "The variable spectrum of echocardiographic manifestations of the mitral valve prolapse syndrome" by A. N. DeMaria, M.D., et al, Circulation 50:33, 1974, with the permission of the authors and The American Heart Association, Inc.)

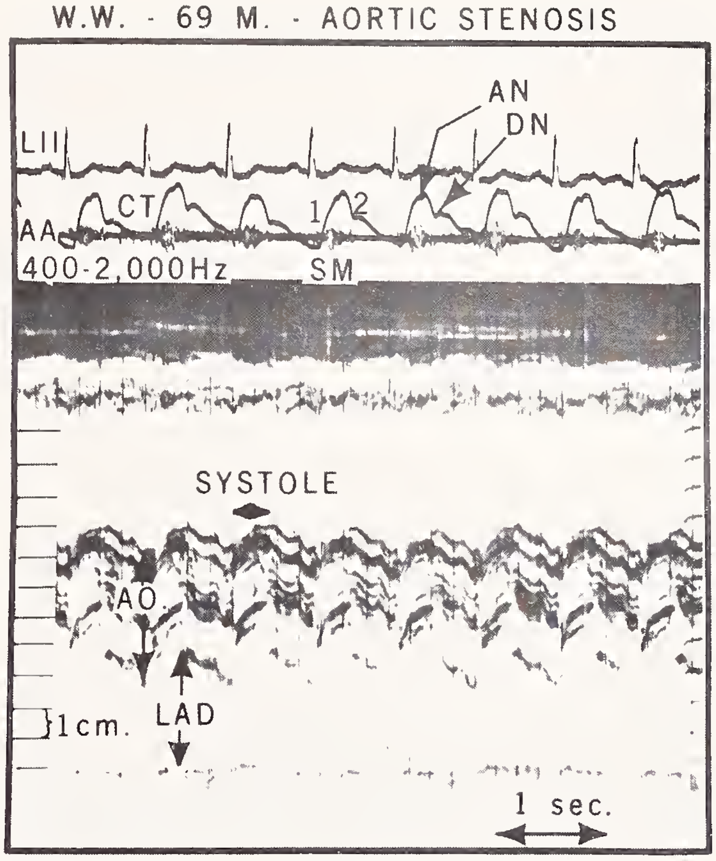

Figure 9
CT,Simultaneous LII of the ECG, ECG, CT, AA CT, AA phonocardiogram and aortic echocardiogram recorded in a 69-year-old man with moderately calcific aortic stenosis. Note the small aortic valve orifice surrounded by masses of echoes secondary to the calcified aortic leaflets. (AN = anacrotic notch. ND = dicrotic notch.)

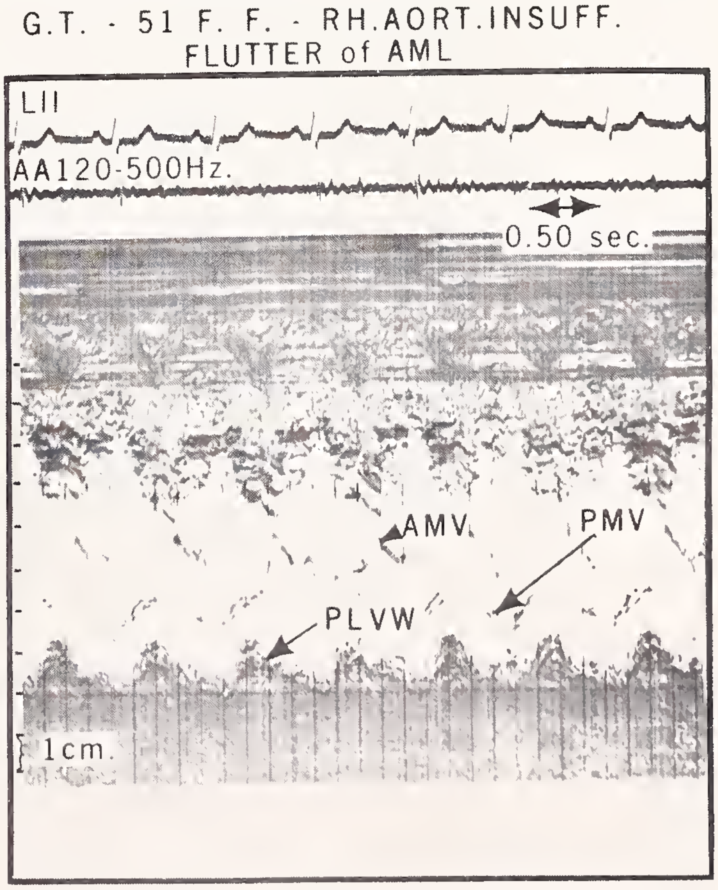

Figure 10
LII of the ECG, AA phonocardiogram and mitral valve echocardiogram recorded in a 51-year-old woman with aortic insufficiency. Note the fine fluttering motion of the AMV which is particularly evident during the first 2 beats.

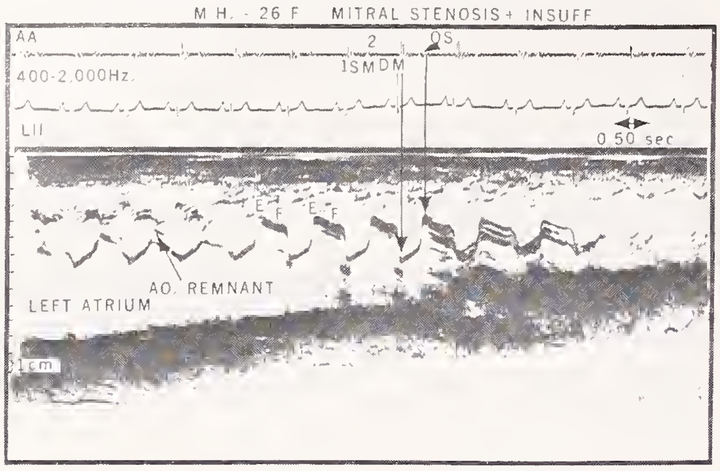

Figure 11
Simultaneously recorded AA phonocardiogram, LII of the ECG and mitral valve echocardiogram in a 26-year-old woman with mitral stenosis and insufficiency. Note the abnormal anterior motion of the posterior leaflet. In addition, the dense anterior leaflet echoes are flattened (E-F). An opening snap (OS) is recorded in conjunction with anterior motion of the mitral leaflets. (SM = systolic murmur. DM = diastolic murmur.)

tricular filling produces a diminished E-F slope, which can be correlated with the mitral valve gradient.[3-7] Multiple heavy echoes emanating from the mitral leaflets despite reduction in gain setting on the echocardiograph, is indicative of valve thickening.[6] A very heavy, homogenous mass of echoes beneath the anterior leaflet frequently indicates calcification.[29] When maximum excursion of the anterior leaflet is small despite changes in transducer angle, the valve is considered non-pliable.

Atrial myxomas are primary myocardial tumors which may present a baffling array of clinical signs and symptoms that frequently suggest mitral valvular disease with embolic phenomena. These tumors may be pedunculated and flop through the mitral valve during diastole, producing a mass of echoes behind the anterior mitral leaflet (figure 12).[30] The E-F slope may be diminished and thereby further suggest mitral stenosis. However, scannning from the superior aspect of the left ventricle toward the left atrium will demonstrate that the echoes originate from the left atrium when a myxoma is present.[7] Echocardiography provides a quick and safe non-invasive diagnostic modality and reduces any possible risks of morbidity associated with cardiac catheterization in these patients.

There has recently been a great deal of interest in the application of echocardiography to coronary artery disease. Many investigators have attempted to evaluate left ventricular function and calculate left ventricular hemodynamic parameters by examination of the echocardiogram.[31-35] In normal individuals and patients with symmetrically diseased left ventricles, cardiac output can be fairly accurately calculated from the echocardiogram by using changes in the left ventricular internal dimension between systole and diastole. Coronary artery disease, however, usually results in a patchy left ventricular contraction abnormality. It follows, therefore, that this type of cardiac output estimation will be inaccurate in these patients.[6-17] One imperfect but useful parameter for estimating forward flow is the amplitude of excursions of the mitral and aortic valves as seen on the echocardiogram.[7] With very low cardiac outputs, the mitral valve may assume a "tiny double diamonds" appearance (figure 13).[36] Frequently, the mitral valve will appear to be floating in the center of the left ventricular cavity, abnormally distant from the posterior left ventricular wall.

Some estimate of left ventricular compliance and diastolic pressure can often be made by ex-

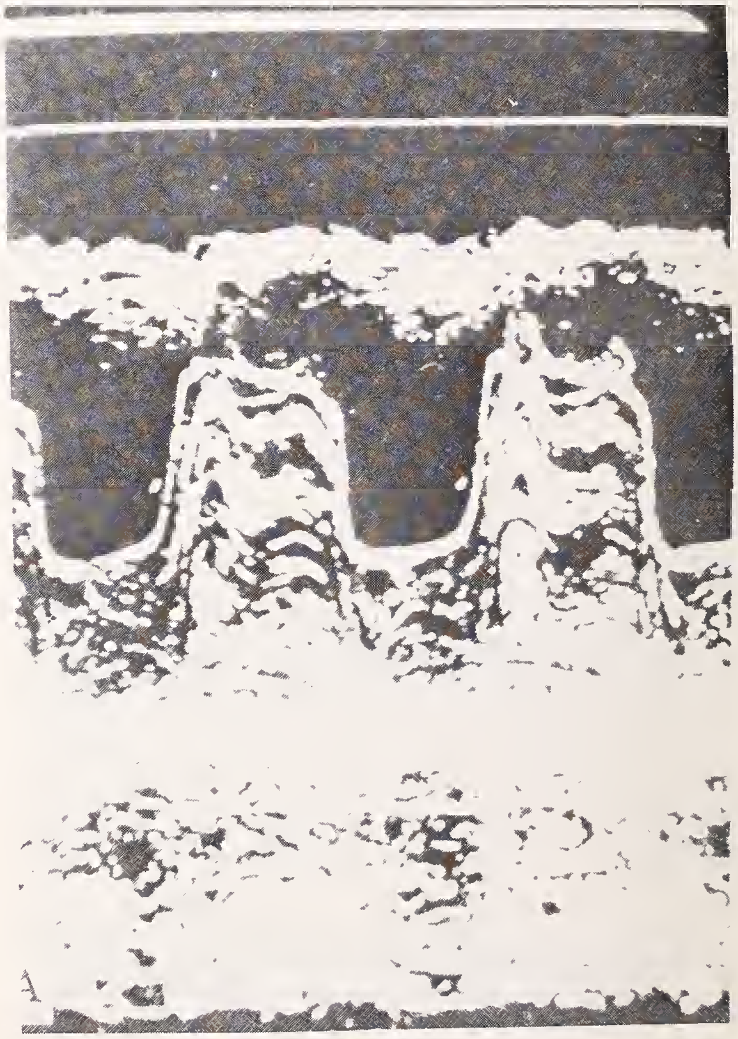

Figure 12
Polaroid recorded mitral valve echocardiogram from a patient with left atrial myxoma. Note the mass of echoes within the confines of anterior leaflet motion. The E-F slope is diminished. Reproduced from Nasser et al: Atrial myxoma. Part II: Phonocardiographic, echocardiographic, hemodynamic and angiographic features in nine cases. Amer. Heart J. 83:810, 1972. Published with the permission of W. K. Nasser, M.D.

amining the motion of the anterior leaflet of the mitral valve. When left ventricular end-diastolic pressure is markedly elevated in conjunction with a non-compliant left ventricle, the A-C interval of the anterior mitral echocardiogram may be prolonged (figure 14B).[7, 37] On the other hand, in patients with elevated left ventricular *initial* diastolic pressures associated with fairly compliant left ventricules, the ventricle fills slowly during early diastole, resulting in a diminished D-E slope. The major portion of ventricular filling may then depend upon atrial contraction, as indicated by a high A point on the mitral echocardiogram (figure 14C).

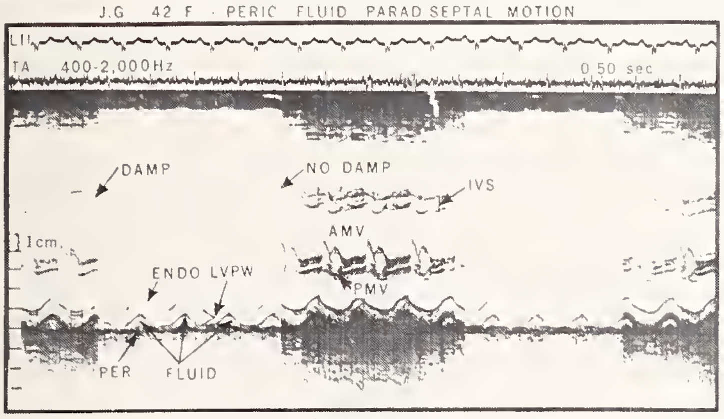

Figure 13
Simultaneously recorded LII of the ECG, TA phonocardiogram and mitral valve echocardiogram in a 42-year-old woman with cardiomyopathy and reduced cardiac output. The center portion of the figure shows extremely small amplitude of the AMV and PMV motion.

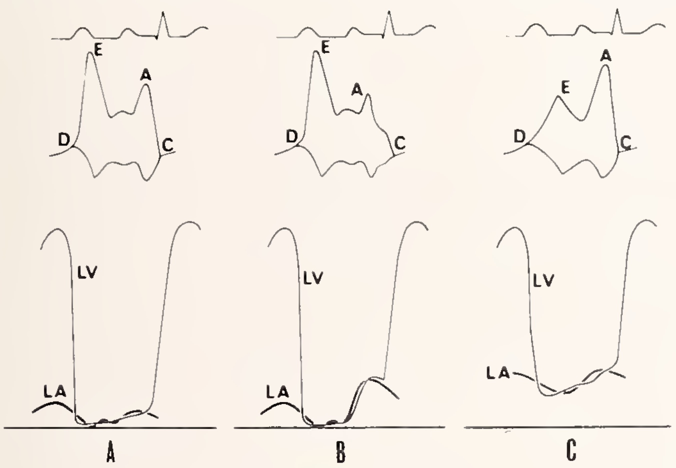

Figure 14
Schematic representation of the effects of high diastolic left ventricular pressures on the motion of the anterior leaflet of the mitral valve. A = normal. B = elevated left ventricular end-diastolic pressure. C = elevated left ventricular initial diastolic pressure. LV = left ventricular pressure curve. LA = left atrial pressure curve. (Courtesy of Lea & Febiger, Philadelphia.[7])

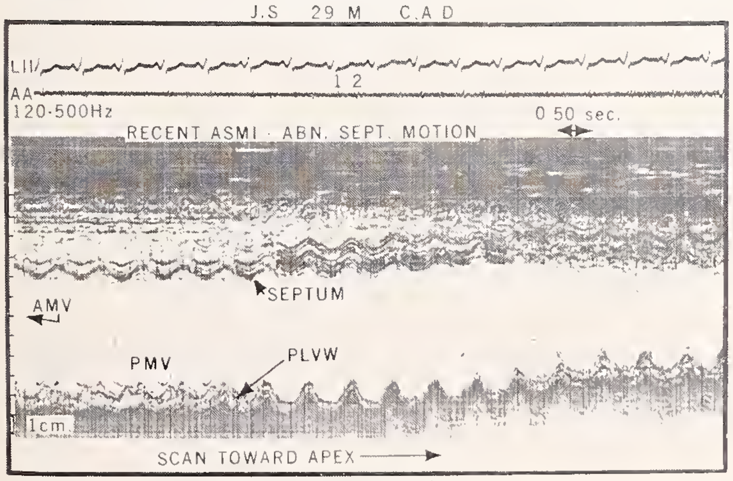

Figure 15
Simultaneously recorded LII of the ECG, AA phonocardiogram and M-scan in a 29-year-old man with recent anteroseptal myocardial infarction. Note the abnormal anterior motion of the interventricular septum during ventricular systole.

The scalar electrocardiogram and vectorcardiogram are undoubtedly more sensitive than conventional single crystal echocardiography for the detection of myocardial infarctions. Despite this fact, the left ventricular scan often provides informaton regarding septal and posterior left ventricular wall contractility as well as an estimate of the size and shape of the left ventricle.[7] Figure 15 is an echocardiograph from a 29-year-old male who had an anteroseptal myocardial infarction. The interventricular septum moves paradoxically and the normal tapering of the left ventricle toward the apex is interrupted by a small aneurysmal bulge. True posterior myocardial infarctions may likewise be diagnosed by means of echocardiography.

The application of echocardiography for the evaluation of congenital heart disease is one of the most rapidly advancing areas in cardiology today. The echocardiographic features of hypoplastic left heart,[38] Ebstein's anomaly,[39] d-transposition,[19] and several other congenital anomalies have been described, but are beyond the scope of this paper. Atrial septal defects represent one of the most common congenital cardiac anomalies seen in the adult population. In this condition the interventricular septum moves in either a flattened or paradoxical fashion (figure 16).[7, 40] In addition, the right ventricular dimension is increased. These findings may also be seen in association with any condition causing a volume overload of the right ventricle, including tricuspid insufficiency, pulmonic insufficiency, or anomalous pulmonary venous return.[7, 41, 42] A normal echocardiogram, however, rules out a hemodynamically significant atrial-septal defect.

SUMMARY

In summary, echocardiography may be applied for the diagnosis and evaluation of a broad spectrum of cardiac diseases, including acquired valvular disease, congenital heart disease, cardiomyopathies, coronary artery disease, and pericardial effusions (to be covered in another paper). There are no major contraindications to

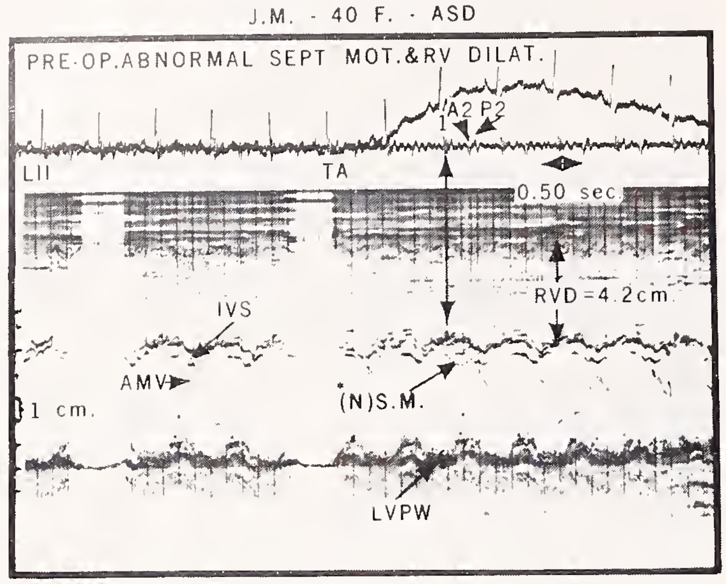

Figure 16
Echocardiogram from a 40-year-old woman with atrial septal defect. The right ventricular cavity dimension is increased and the interventricular septum moves in a paradoxical fashion. The drawn dotted line represents the usual and normal posterior motion of the septum during ventricular systole.

echocardiography. The procedure is advantageous in that it can be performed on an outpatient basis, it is relatively inexpensive, and it is totally atraumatic to the patient.

A frequently asked question is: "Does echocardiography replace cardiac catheterization?" The answer to this question will differ depending greatly upon the particular disease state, the quality of the echocardiogram, and the risk of cardiac catheterization at various centers. At our institution we have obviated cardiac catheterization by utilizing echocardiography in patients with prolapsed mitral valve and IHSS. Other groups have used echocardiography without catheterization for the pre- and post-operative evaluation of atrial septal defects, mitral stenosis, and many other conditions.

Regardless of the ever-changing role of echocardiography in relationship to cardiac catheterization, one thing is certain: echocardiography represents a formidable addition to the diagnostic armamentarium of the practicing physician.

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ECHOCARDIOGRAPHY IN THE DIAGNOSIS OF PERICARDIAL DISORDERS

MOHAMMAD A. HABIBZADEH, M.D.

ABBREVIATIONS

AW – Anterior Wall
RVS – Right Ventricular Septum
LVS – Left Ventricular Septum
PW – Posterior Wall
EP – Epicardium
PF – Pericardial Fluid (Effusion)
Endo – Endocardium
PP – Parietal Pericardium
IVS – Interventricular Septum
ECG – Electrocardiogram
AMV – Anterior Mitral Valve

SYNOPSIS-ABSTRACT

Echocardiography is a very useful method for the detection of various pericardial disorders, especially effusion. In a critically ill patient, when pericardial effusion or tamponade is suspected, an early diagnosis is necessary to establish the proper management of the patient. Echocardiography provides a safe, highly sensitive and reliable technique in such circumstances. Being a readily available and harmless procedure, the examination can be performed as frequently as necessary both in establishing the diagnosis and in follow up.

METHODS AND MATERIALS

An Echoline-20 ultrasonoscope equipped with A. and M. mode for demonstration of reflected ultrasound beam and a single electrocardiographic lead for the purpose of accurate timing was used for these studies The echocardiographic pictures were obtained with a polaroid camera installed over the cathode ray tube of the ultrasonoscope. The techniques used in these studies were similar to those recommended by Feigenbaum and other investigators in this field.[1] Patients were studied in a semi-recumbent position. The ultrasonic transducer, type 'C-10, 16 mm diameter, 2.25 MHZ, frequency," was manually positioned at the 4th or 5th intercostal space at the left sternal border. The ultrasonic beam was directed laterally to the left

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and posteriorly, slightly away from the mitral valve. Maximal clarity of the posterior left ventricular wall was obtained by proper adjustment of the near gain, reject, coarse and damping controls. Ideal position for recording was when a clear motion of the endocardial and epicardial layers of the posterior left ventricular wall could be delineated by the echo beam. Pericardial fluid was recorded as a relatively echo-free space between the posterior left ventricular epicardium and the posterior parietal pericardium.[2] With a large effusion, anterior fluid could be demonstrated by a similar echo-free space between the anterior right ventricular epicardium and the parietal pericardium against the anterior chest wall. Constrictive pericarditis was suspected when the posterior left ventricular endocardium, epicardium and parietal pericardium all exhibited flat motion during diastole. In such cases the ultrasonic beam was directed toward the anterior mitral valve leaflet. Adjustment of the controls over the front panel of the ultrasonoscope were made to record a clear pattern of the valve motion for the purpose of E-F slope measurement. On the echocardiographic record the E-F slope is that portion of the anterior leaflet motion which begins at the peak of the very rapid anterior movement to the point where the leaflet has returned posteriorly and starts to move anteriorly again (Fig. 15). The E-F slope is measured in mm/second, "normal 80-150 mm/second." In patients with constrictive pericarditis the E-F slope is at the upper limits of normal.

RESULTS

The following five cases are presented to illustrate the clinical usefulness of echocardiography in the diagnosis and follow up of patients suspected of having various pericardial disorders.

Case #1:

A 44-year-old male with aortocoronary bypass surgery was started on Coumadin on the third postoperative day. During the second week he devloped a low-grade fever. In the third week, he presented with dspnea, nausea, vomiting, abdominal and chest pain. Cardiac ascultation was unremarkable except for tachycardia. He had low voltage on the ECG and cardiac enlargement on chest X-ray (Fig. 1). His echocardiogram disclosed the presence of a significant amount of pericardial effusion (Fig. 2). Several hours later he developed signs of cardiac tamponade. Peri-

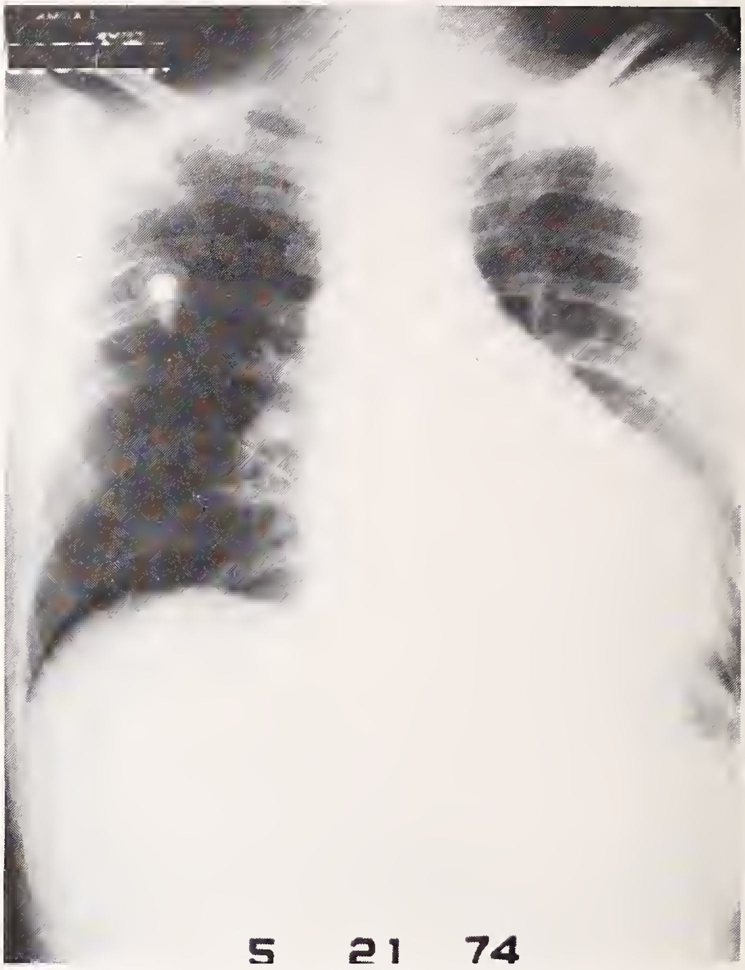

Figure 1
Case #1. Frontal chest roentgenogram shows significant cardiac enlargement with clear lungs.

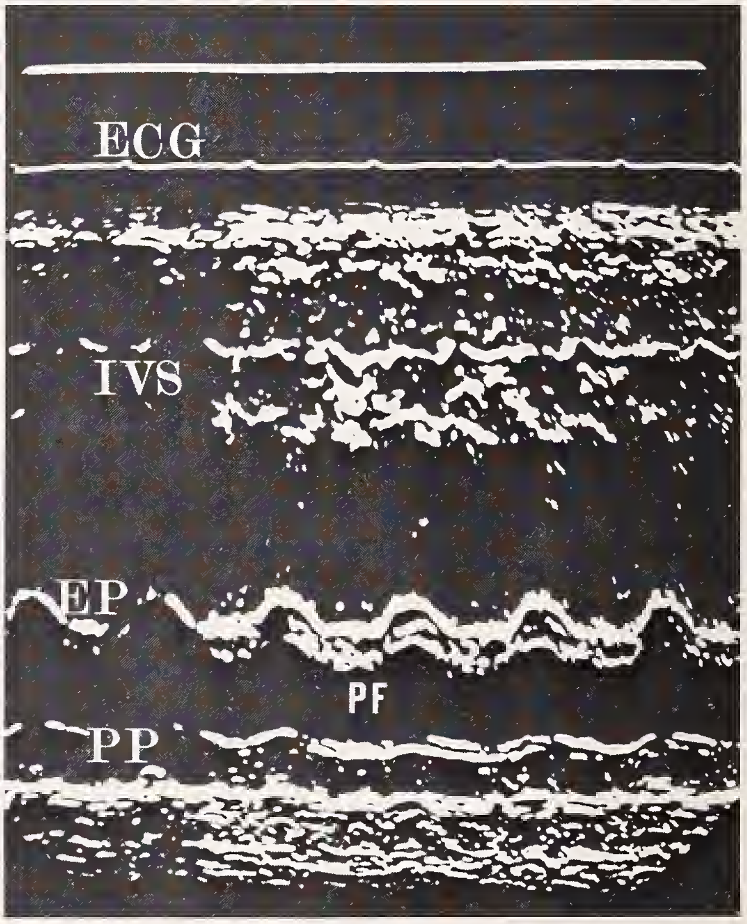

Figure 2
Case #1. Patient with hemopericardium and acute cardiac tamponade due to anticoagulant following open heart surgery. Note large amount of effusion with restricted cardiac motion.

cardiocentesis of 300 cc of fluid with a hematocrit of 30% relieved his tamponade. Subsequent echocardiographic examinations revealed a gradual resolution of the fluid (Figs. 3 and 4).

In this patient echocardiographic examination was helpful in establishing the early diagnosis of effusion, and in becoming prepared for emergency pericardiocentesis when tamponade developed.

Case #2:

A 58-year-old male had a porcine mitral valve replacement because of mitral regurgitation and bacterial endocarditis. Four months after surgery he developed continuous anterior chest pain, dyspnea, weakness and generalized malaise. He was afebrile, and had no pericardial friction rub on auscultation. His chest X-ray showed increased cardiac size. On echocardiogram he was found to have a small amount of pericardial effusion (Fig. 5).

A diagnosis of post-cardiotomy syndrome was considered. He was treated with bed rest and analgesics. His symptoms subsided within two

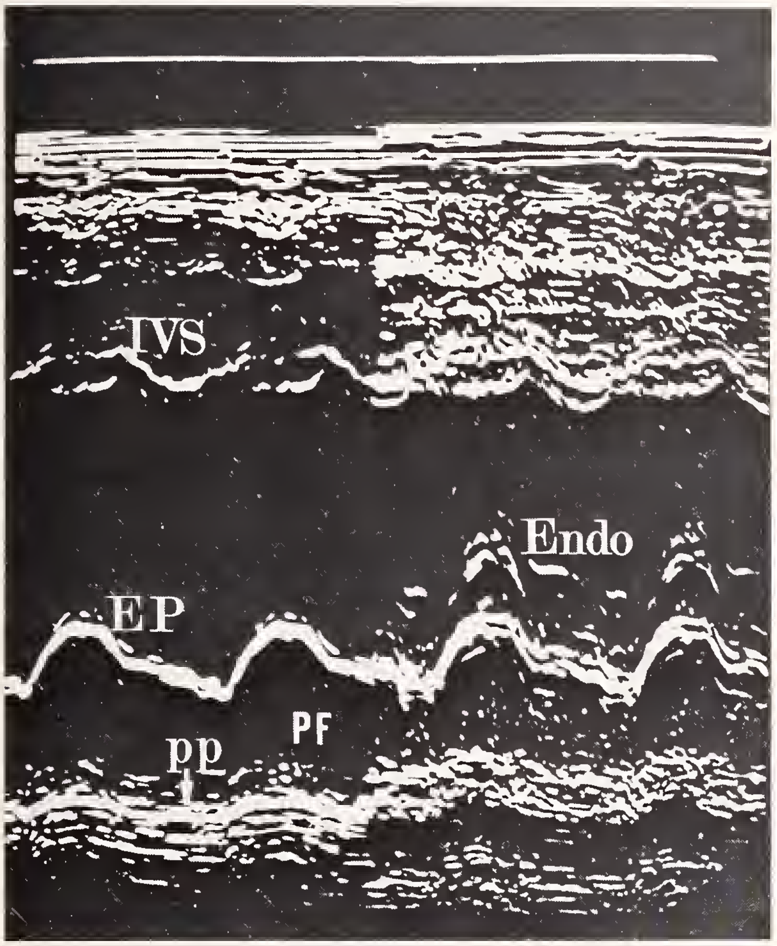

Figure 3
Case #1. Twenty-four hours after the pericardiocentesis. Note the increased cardiac motion following relief of cardiac tamponade.

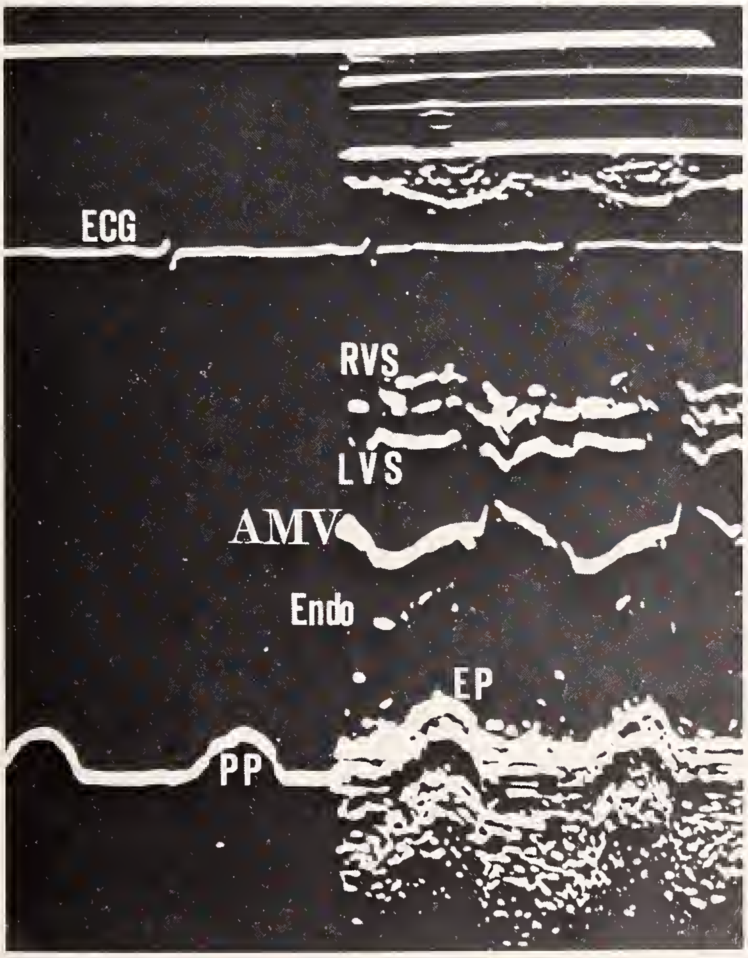

Figure 4
Case #1. Two weeks following pericardiocentesis. The echocardiogram reveals almost complete absorption of the pericardial effusion.

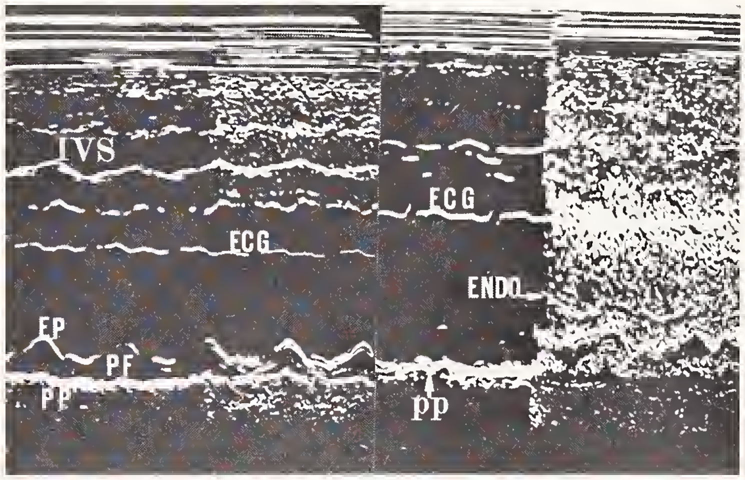

Figure 5
Case #2. The echocardiogram reveals a small pericardial effusion. As the gain is increased, the posterior endocardial echo becomes apparent.

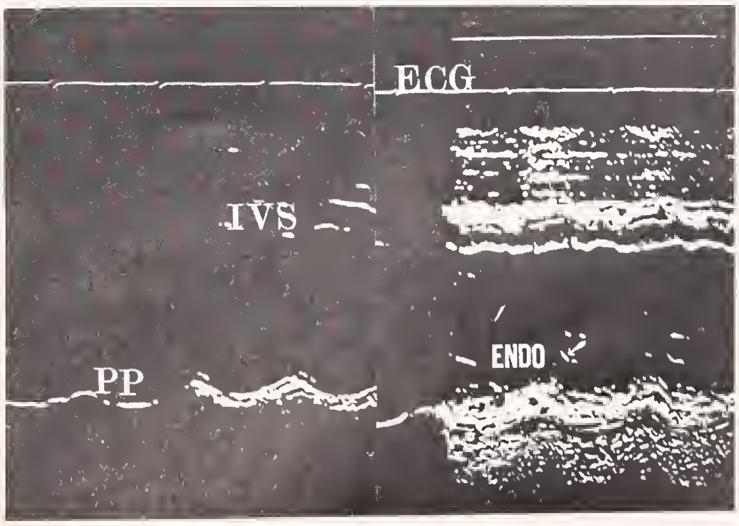

Figure 6
Case #2. Follow-up study four weeks later reveals complete absorption of the pericardial effusion.

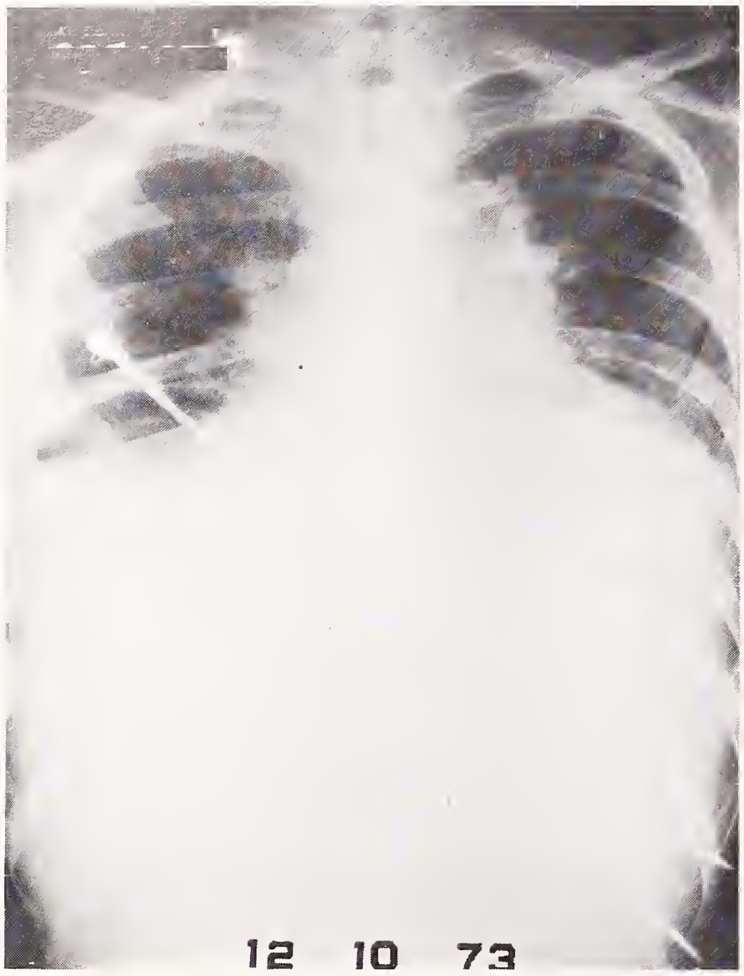

Figure 7
Case #3. Frontal chest roentgenogram showing massive cardiomegaly, pleural effusion, widening of mediastinum and no significant pulmonary congestion.

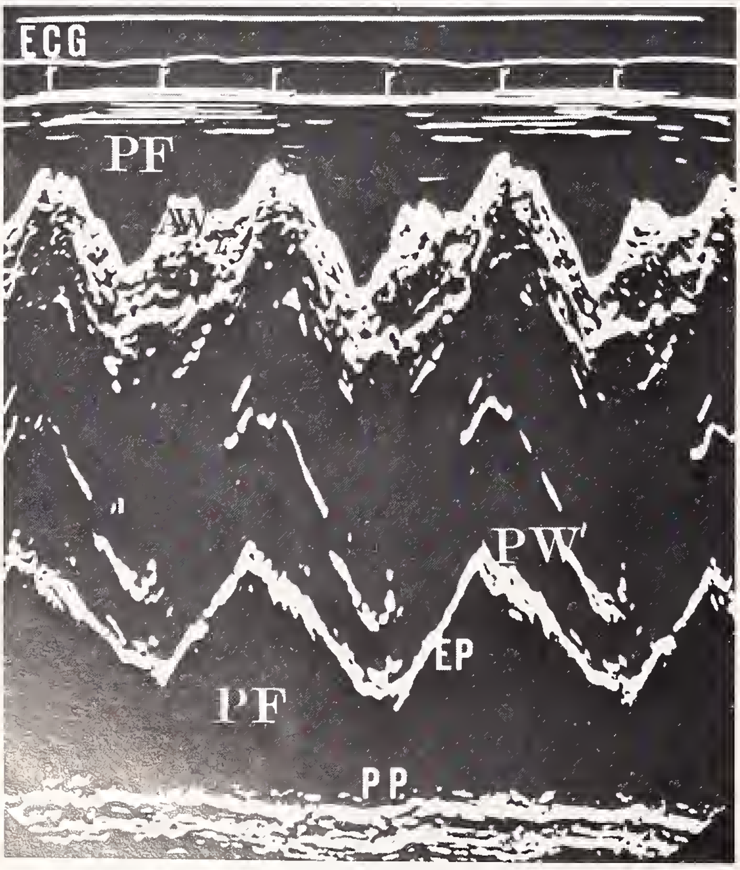

Figure 8
Case #3. Patient with Hodgkin's involvement of the pericardium. The echogram revealed a large anterior and posterior pericardial effusion and congruous motion of heart walls. The oscillations of the heart within the pericardium occurs at a frequency one-half of that of heart rate. The ECG demonstrated electrical alternans. The QRS complexes are indicated by "r".

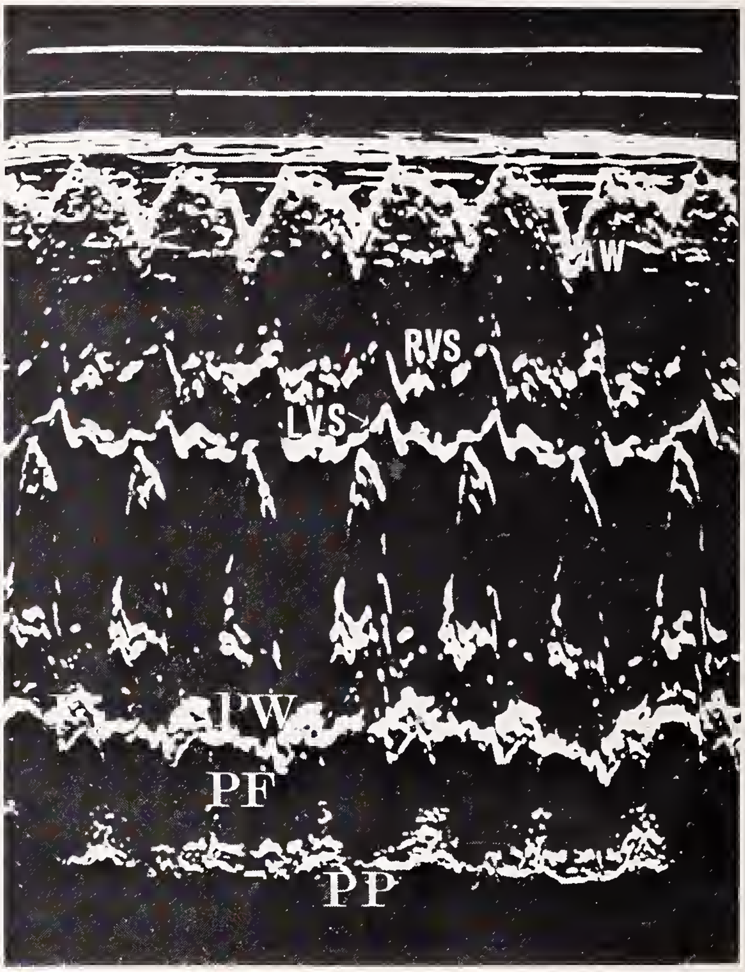

Figure 9
Case #3. After removal of 490 cc of pericardial fluid. Though the pericardial effusion persists after the pericardiocentesis, the oscillations of the heart within the pericardial sac are now the same as the frequency of heart rate.

weeks. Follow-up echocardiography in the fourth week confirmed the resolution of the effusion (Fig. 6).

In this case the presumptive diagnosis of late post-cardiotomy syndrome was virtually confirmed by the initial and follow-up echocardiographic examinations.

Case #3:

A 19-year-old male with the diagnosis of Stage III Hodgkin's disease presented with high fever, shortness of breath, massive chylus pleural effusion, pericardial friction rub and cardiomegaly on X-ray. Echocardiogram revealed a moderate amount of pericardial effusion. His condition gradually deteriorated and a few weeks later he became severely dyspneic with cyanosis, hypotension, marked neck vein distention, further cardiac enlargement on X-ray (Fig. 7) and electrical alternans on ECG. His echocardiogram revealed a massive amount of pericardial effusion (Fig. 8). At this point pericardial tamponade was diagnosed. Through a subxyphoid pericardiocentesis 490 cc of fluid was aspirated (Fig. 9). His

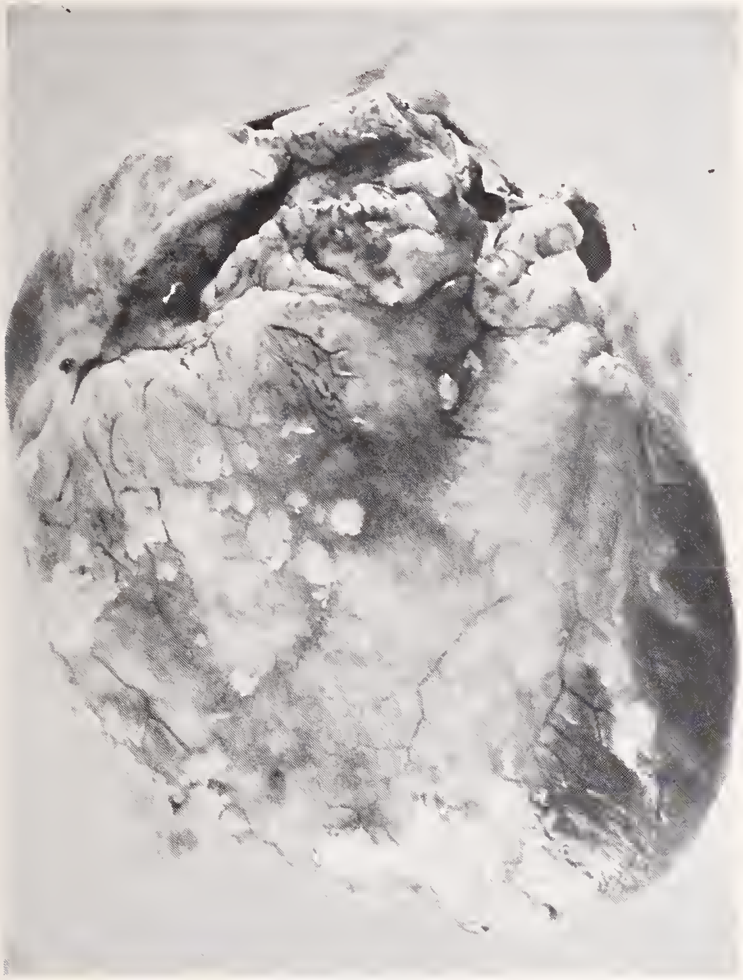

Figure 10
Case #3. Hodgkin's involvement of the heart.

condition improved only slightly. The patient expired the following day. At post mortem examination he was found to have metastatic Hodgkin's involvement of his pericardium (Fig. 10).

In this case the clinical situation was confusing and complicated. Other diagnoses such as obstruction of superior vena cava or thoracic duct with massive cylothorax were also considered. Demonstration of significant increase in pericardial effusion on echocardiogram was helpful in making the decision to perform the pericardiocentesis on such a critically ill patient.

Case #4:

A 52-year-old male with no past history of heart disease had a blunt trauma to his anterior chest wall one week prior to admission. He remained asymptomatic for about an hour, following which he developed severe dyspnea and substernal chest pain. His symptoms continued intermittently. On admission he was in pulmonary edema with severe neck vein distention and distant heart sounds. His liver was 6 cm below the right costal margin. He had marked cardiomegaly on chest X-ray (Fig. 11). His ECG showed an acute anterior wall myocardial infarction.

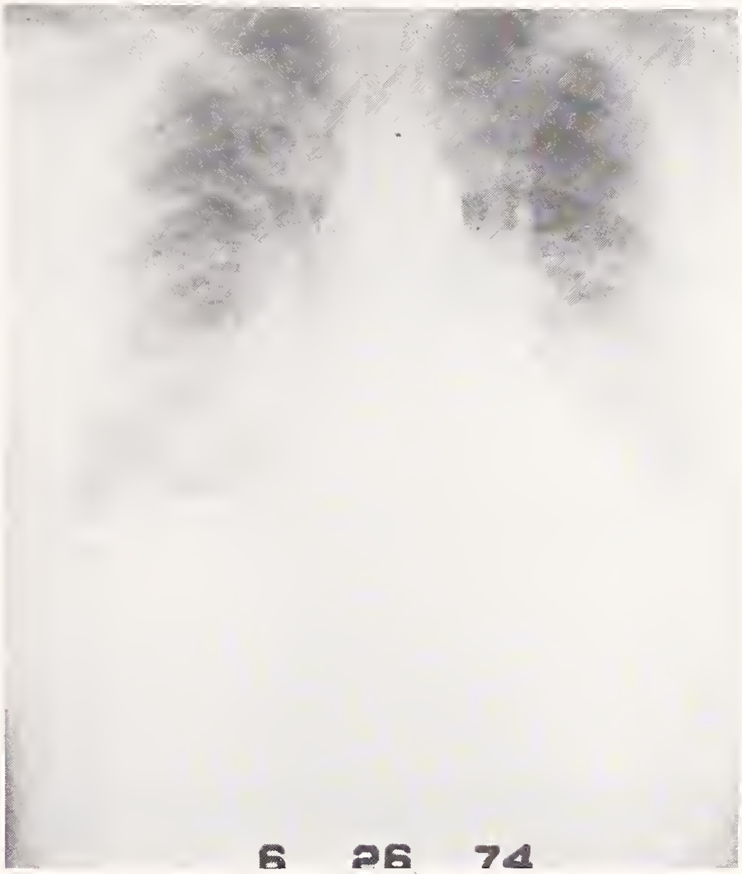

Figure 11
Case #4. Roentgenogram reveals severe pulmonary congestion, pleural effusion and cardiac enlargement.

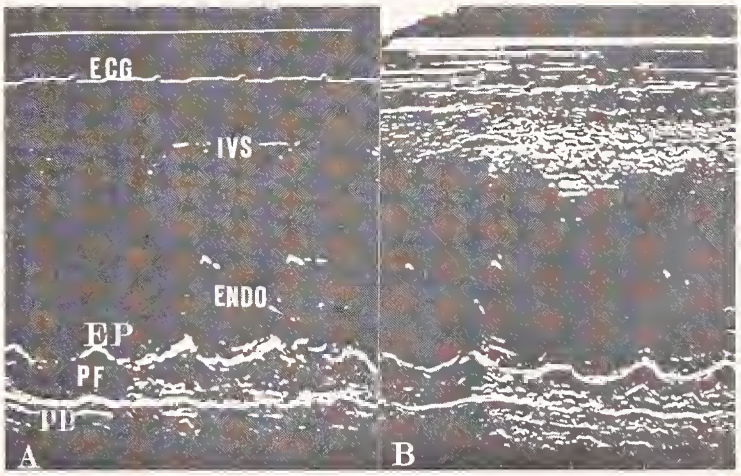

Figure 12
Case #4. Patient with blunt trauma to the chest and acute myocardial infarction. Echocardiogram reveals a moderate amount of pericardial effusion. A. Echocardiogram on admission. B. Twenty-four hours later.

Because of history of chest trauma, an echocardiogram for detection of pericardial effusion was obtained which revealed moderate amount of fluid (Fig. 12). He was treated for pulmonary edema and his pericardial effusion was monitored by follow-up echocardiograms, which showed a gradual resolution (Fig. 13).

The patient's signs and symptoms were compatible with either acute heart failure or "partial" pericardial tamponade. He was critically ill and echocardiography was the only diagnostic procedure without risk of further complications.

Confirmation of the effusion precluded the use of anticoagulants. It also permitted preparations for pericardiocentesis in the event the patient developed complete tamponade.

Case #5:

A 48-year-old male was admitted because of massive edema and 22 pounds weight gain within the six weeks prior to admission. He was found to have moderately severe chronic obstructive pulmonary disease and early cirrhosis of the liver. This was associated with marked neck vein distention, gallop rhythm and hepatosplenomegaly. On chest X-ray he had calcification at the left heart border without significant cardiomegaly (Fig. 14). His echocardiogram revealed a rapid E-F slope (170 mm/sec) (Fig. 15) and a prolonged flat pericardial motion during diastole (Fig. 16), consistent with constrictive pericarditis.

At operation, he was found to have a 0.5 cm thickened fibrotic pericardium. In this patient, the echocardiogram was helpful in further confirming the clinical diagnosis of constrictive pericarditis which was complicated by chronic lung disease.

COMMENTS

Echocardiography is now considered the method of choice in the detection of pericardial effusion. When properly applied, it is a convenient, highly sensitive and reliable technique.[3] It is more reliable than carbon dioxide and radioisotope studies.[4] Being non-invasive, it can be repeated as many times as required, both for diagnosis and follow-up of patients suspected of having pericardial effusion.[5] In emergency situations where pericardial tamponade is impending, valuable time is not lost in trying to confirm the diagnosis by invasive procedures. When differentiation between a large dilated heart and pericardial effusion becomes essential for proper treatment, especially in a critically ill patient, echocardiography is usually the only method of examination.[6] In experienced hands as little as 50 ml of pericardial effusion can be detected without much difficulty.[7] This high level of sensitivity is important for the early recognition of small but clinically significant effusions.[8]

Not only the presence of effusion in the pericardial sac can be detected, but valuable information about the cardiac performance can be obtained by the recording of cardiac motion in the fluid filled pericardial cavity. Patients with fairly acute cardiac tamponade exhibit limited

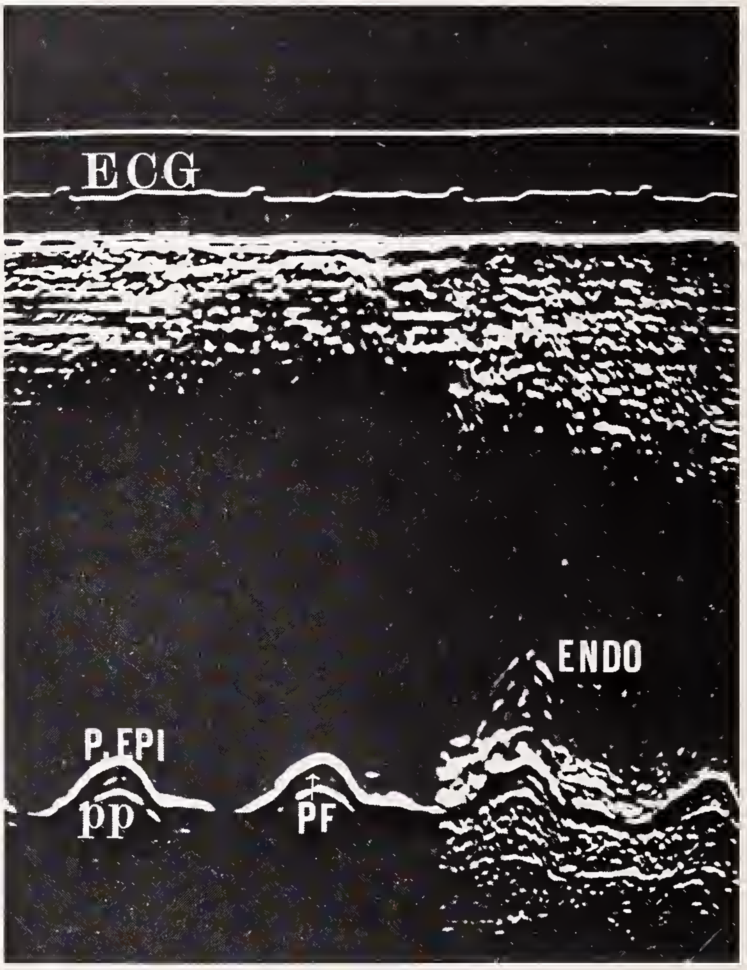

Figure 13
Case #4. Echocardiogram ten days later shows minimal amount of effusion.

Figure 14
Case #5. Chest roentgenogram reveals reduced peripheral pulmonary vessels, transluency of the left base, right pleural effusion with adjacent pleural thickening and fibrosis. Note: Calification at the left heart border with no significant cardiomegaly.

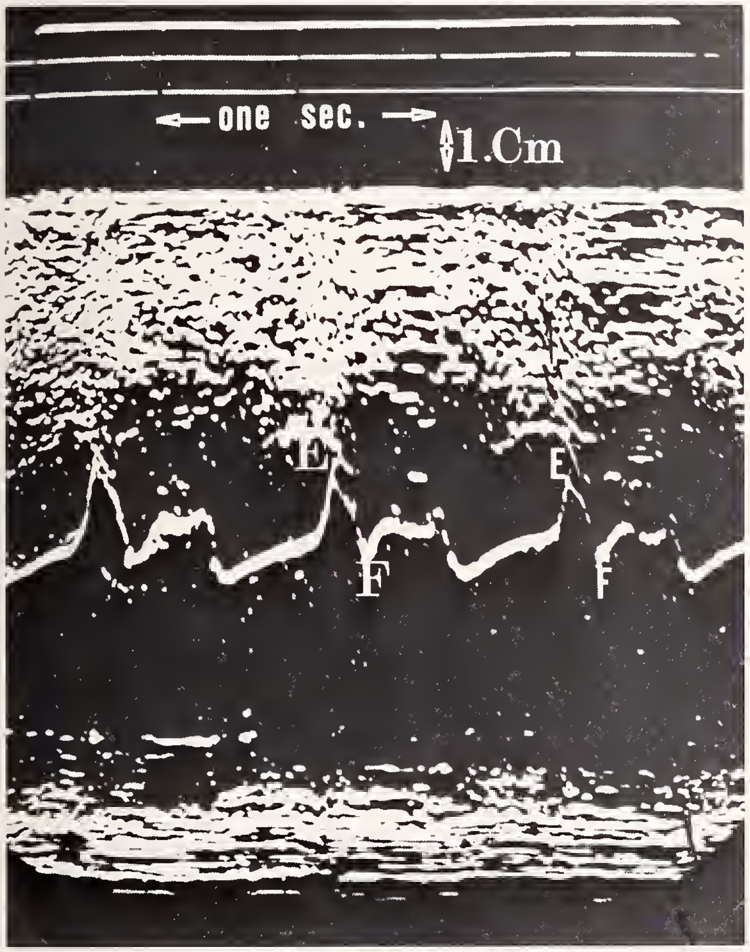

Figure 15
Case #5. Echocardiogram reveals a rapid E-F slope (170 mm/sec) of the anterior leaflet of the mitral valve. This pattern is consistent with, but not diagnostic of, constrictive pericarditis.

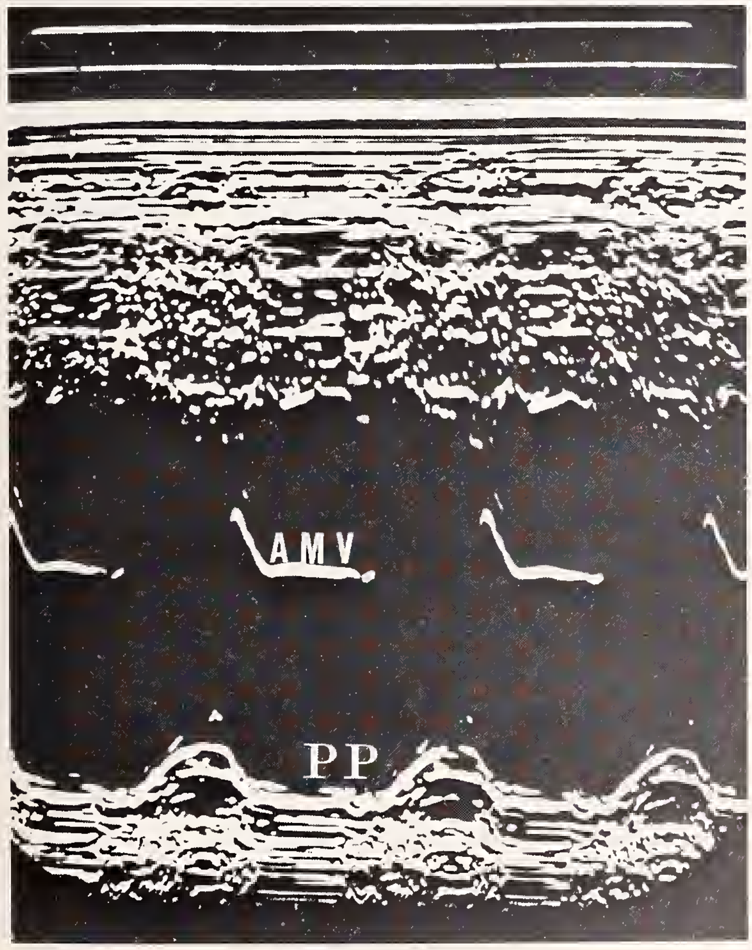

Figure 16
Case #5. Patient with constrictive pericarditis. Note multiple echoes from the pericardium with prolonged flat pericardial motion during diastole.

heart wall movement. This finding is consistent with impaired ventricular filling and decreased stroke volume resulting from the increased intrapericardial pressure.[9] In patients with massive pericardial effusion, the heart moves excessively. This happens, especially if the effusion is due to malignancy, as in Case #3. Presumably, the pericardium no longer has its restrictive function, and the heart which is lubricated by effusion, swings freely in the fluid filled pericardial cavity.[10] Furthermore, with very large collections, there may be paradoxical motion of heart walls, i.e., the right and left ventricular walls move in the same direction (Fig. 8). In extreme cases, there is a rotation of the heart every second beat with production of electrical alternation since the electrical axis of the heart changes every second beat.[11]

At the present time, a reliable criteria for the echocardiographic diagnosis of constrictive pericarditis is not available. Rapid E-F slope and prolonged flat pericardial motion during diastole are useful but not diagnostic and their value depends on the clinical situation.[12]

In order to obtain maximum and correct information from the echocardiographic examination, the examiner should be familiar with the technical defects and pitfalls, particularly with respect to direction of the transducer and control settings on the echograph.[13] Much of this depends on the technical ability, knowledge and experience of the operator.[14, 15]

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PSYCHOGENIC RHEUMATISM

HERBERT KAPLAN, M.D.

It has been reported that Dr. Philip Hench, in whose honor this lectureship was created, spent more time taking patients off of the drug that won him the Nobel Prize than in initiating patients on cortisone therapy. It is then quite fitting that in this series of lectures we discuss a rheumatic disease for which steroids are never indicated! For the purpose of this discussion, *psychogenic rheumatism* and *fibrositis* will be considered to be one and the same entity. While there are some who will argue that there is local pathology at the site of tender muscles in patients with "fibrositis," and the disease is not psychogenic, to date no abnormalities have been found in the muscles of these patients.

While psychogenic rheumatism is basically a diagnosis of exclusion, there are certain telltale findings in the history and physical exam that are almost as diagnostic as a gram stain in pneumococcal pneumonia.

PERTINENT POINTS IN THE HISTORY OF PATIENTS WITH PSYCHOGENIC RHEUMATISM

A. The time of onset of symptoms is quite vague, e.g., "I have been hurting for many years" or "as long as I can remember." Medical aid is rearely sought early in this illness.

B. The patient is unable to localize the pain, typically "hurting all over."

C. The pain rarely conforms to any known anatomic distribution. It is often unilateral, with the "entire left side hurting."

D. The pain often "travels", e.g., pain that starts in the ankle and travels to the neck, affecting all of the anatomy en route. This is in contrast to the pain of other rheumatic diseases which "migrates" or moves by "extension" from one joint to the other.

E. Most important is the bizarre description of the pain, such as "burning", "tingling", "searing", "like a knife sticking into me", or "swelling of the muscle". (The joints do not swell but the *muscles* do.)

F. Histrionics during the description of the pain is quite typical. Autopalpation, such as grabbing the deltoid area while describing the pain, is a common sign. Possibly diagnostic is the "Tear Sign," when the degree of pain is such that tears well up into the eyes of the patient while describing the discomfort.

PERTINENT NEGATIVES

A. Morning stiffness may be present, but is certainly not severe, and discomfort upon arising is usually no worse than later in the day. In contrast to other rheumatic disease, the stiffness frequently *increases* as the day goes on.

B. The pain is not episodic. Rheumatoid arthritis patients have more "good days" than patients with psychogenic rheumatism, who usually hurt "all the time."

C. There is often *not* a positive system review. The musculoskeletal system seems to cover enough area so that the patients do not find it necessary to involve other organ systems in their psychophysiological response.

FAMILY HISTORY

Surprisingly the family history is often *positive* for "arthritis." These patients are usually aware of everyone in their family who has had "arthritis" even though upon further questioning it usually proves to have been of a benign nature. These patients *know* that arthritis is inherited," and therefore this may be in part responsible for their musculoskeletal system being their "shock organ." In this era where immune responses are recognized as being important in rheumatic disease, we might consider that these patients' psyche is "sensitized" by their relatives with "arthritis."

PHYSICAL EXAMINATION

A. Although there is no evidence of acute joint inflammation, these patients often will have Heberden's nodes. It is possible that once again their psyche is "sensitized" by these nodules which are certainly evidence of "arthritis." It is logical for the patient to assume that if there is arthritis in those easily visible joints then the multiple aches that the patient suffered from elsewhere are also due to "arthritis."

B. Again there is the "Tear Sign" during the examination, with muscles being painful to touch but with a normal consistency. (The "Touch Me Not" syndrome.)

C. Again, histrionics during the examination with the patient wincing and withdrawing with even minimal palpation of muscles.

D. The *patient* emphasizes the joint crepitation during the examination. He makes sure that the physician does not miss the "popping" sound during the examination which is again, evidence to him of organic disease.

LABORATORY: A DISASTER AREA FOR BOTH PATIENT AND DOCTOR

It is easy to find a positive test in the laboratory survey of patients with rheumatic disease. When the history and physical examination to

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this point suggest psychogenic disease, the physician must resist the temptation to make a diagnosis of organic rheumatic disease solely on the basis of one of the following non-specific tests:

A "positive" test for rheumatoid factor does not make the diagnosis of rheumatoid arthritis. (This test must be titered and only when positive in a titer greater than 1:80 does it *suggest* rheumatoid arthritis.) An "elevated" uric acid is not diagnostic of gout. Only a minority of patients with hyperuricemia have gout. An "elevated" sedimentation is not diagnostic of inflammatory joint disease. Especially in the over-45 year age group the Westergren sedimentation rate may normally be up to 45 in females and 30 in males. A "positive" antinuclear antibody is not pathognomonic for lupus. Again the titer is important and in some laboratories, the pattern of immunofluorescence is helpful in making the diagnosis. The non-specificity of all of these tests cannot be over-emphasized. And finally the danger of diagnosing "arthritis" on the basis of a bony spur on a lumbar spine film must be stressed.

MANAGEMENT

Most important in the management of these patients, once other organic disease has been excluded, is to emphasize that "You don't have arthritis." Since muscle disease is less ominous to the patient than bone disease, the physician can emphasize that "I know it hurts, but it is in the muscles, not the joints." He can recognize the *reality* of the pain but at the same time stressing the good prognosis, the non-crippling nature of the problem, and the fact that there is no predisposition to "arthritis." Tension can be noted as *one* of the causes of muscle pain. A surprising number of patients will be delighted to learn that their muscles may be hurting because both they *and their muscles* are "tense."

After the Reassurance Lecture, salicylates and muscle relaxants can be used judiciously. Local steroid-Xylocaine injections, *if a trigger point can be found*, may be justified. This latter technique is *only* justified *after* the Reassurance Lecture. Appropriate physical therapy with whirlpool and local heat is used only after the above lecture.

And finally, a return appointment is made, to emphasize the physician's interest and concern in the management of this difficult problem.

HEMARTHROSIS AS THE PRESENTING MANIFESTATION OF MYELOPROLIFERATIVE DISEASE

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In evaluating a patient with hemarthrosis, it is customary to consider trauma, neoplasm,[1,2] infection, and coagulation abnormalities in the differential diagnosis. Hemorrhagic effusions are also seen with neuropathic joints,[3] and recent reports have linked hemarthrosis to the pseudogout syndrome,[4] sickle trait,[5] and metallic joint prostheses.[6] We have just had the opportunity of studying two patients in whom painful hemarthrosis was the presenting manifestation of a myeloproliferative syndrome.

PATIENT SUMMARIES

Case 1

A 69-year-old black man was admitted with pain in the right knee and hip. He had fallen a few hours after the sudden onset of painful swelling in the right knee. He had a history of cerebellar ataxia and intermittent swelling of the right knee usually precipitated by trauma. Examination revealed a large tender hematoma over the right greater trochanter. There was increased warmth of the right knee with diffuse tenderness, slight synovial thickening, and a moderate effusion. X-rays of the right hip and knee showed only mild degenerative changes. Aspiration of the right knee yielded bloody fluid with a white cell count of 8,100/cu mm (95% polymorphonuclear leukocytes, 5% lymphocytes). Examination of synovial fluid for crystals was negative, Gram stain revealed no organisms, and a smear for acid fast bacilli (AFB) was negative. Routine, AFB, and fungal cultures showed no growth. Other studies included a hematocrit of 42%, white blood count 21,200/cu mm with a normal differential count, platelets were reported as increased on smear, and the sedimentation rate was 70 mm/hr (Westergren, corrected). Ser-

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um uric acid was 2.8 mg/100 ml and tests for antinuclear antibody and rheumatoid factor were negative. Leukocyte alkaline phosphotase was 240. There was no evidence of a coagulation disorder, and hemoglobin electrophoresis revealed a pattern of AA hemoglobin. The patient responded to intraarticular triamcinolonen and was discharged.

Six weeks later the patient again developed a painful hemarthrosis of the right knee, but this time there was no prior trauma. He was readmitted for open synovial biopsy. At surgery the synovium appeared diffusely thickened and was coated with hemorrhagic exudate; pathologic examination disclosed only chronic non-specific synovitis. Post operatively the patient had persistent serosanguineous drainage from the incision. Peripheral white blood count was 23,800/cu mm and occasional immature neutraphils were noted. Platelet count rose from 1,650,000 to 2,180,000/cu mm. Bone marrow examination revealed hyperplasia of all elements; megakaryocyte morphology was atypical, platelet budding was excessive, and huge clusters of platelets were present. The diagnosis of myeloproliferative syndrome was made and busulfan therapy initiated.

Case 2

An 88-year-old woman was admitted with painful swelling of the left knee. She had a several year history of osteoarthritis of the knees controlled with salicylates, and 5 months previously had had a mastectomy for carcinoma. Examination revealed increased warmth of the left knee with diffuse tenderness, slight synovial thickening, and a large effusion; temperature was 100.6 degrees F. There was no lymphadenopathy nor hepatosplenomegaly. X-rays of the knees showed mild degenerative changes with chondroealcinosis. Aspiration of the left knee yielded 15 ml of dark, bloody fluid which contained no crystals and had 52,500 white blood cells/cu mm with 97% neutrophils and 3% lymphocytes. Gram stain and AFB smears of the synovial fluid revealed no organisms; routine, AFB and fungal cultures showed no growth. Other laboratory studies included a hematocrit of 46%; white blood count 21,900/cu mm with 88% polymorphonuclear leukocytes; and sedimentation rate 10 mm/hr (Westergren, corrected). Tests for antinuclear antibody and rheumatoid factor were negative; uric acid was 2.6 mg/100 ml. Serum immunodiffusion, B1C globulin, liver function tests, and partial thromboplastin time were normal. Platelet counts ranged from 750,000 to 1,120,000/cu mm. A liver-spleen scan and bone scan showed no evidence of metastatic disease. Until culture results were available the patient was treated with oxacillin. Fever subsided within 24 hours, and pain and swelling in the left knee gradually decreased over the next 7 days with acetaminophen. Because of the thrombocytosis and our experience with Case 1, a bone marrow examination was obtained. This showed a marked increase in megakaryocytes with large, atypical forms and was interpreted by the consulting hematologist as consistent with a myeloproliferative syndrome.

Several factors may have been involved in the development of hemorrhagic joint effusions in the patients presented. In Case 1, there was a history of trauma related to the first hemarthrosis, but the subsequent episode was spontaneous. Because of the history of cerebellar ataxia, hemarthrosis secondary to neuropathic joint disease was considered, but the clinical and X-ray features were not suggestive of neuroarthropathy. In Case 2, the patient had chondrocalcinosis, but examination of synovial fluid with polarizing microscopy was negative for crystals. Since synovial biopsy was not done, the possibility of an intraarticular neoplasm could not be excluded.

The precise mechanism whereby these patients developed painful hemarthroses is unclear, but there is ample documentation of bleeding phenomena in myeloproliferative disorders associated with elevated platelet counts.[7, 8] Purpura, epistapis, bleeding of the gums and gastrointestinal tract have been common in many reviews.[7, 8, 9, 10] Two explanations for the hemorrhagic manifestations of myeloproliferative disorders have been proposed. One states that thrombocythemia results in a coagulation disorder due to an excess of platelet phospholipid. The other proposes the presence of functionally abnormal platelets. Recent studies have demonstrated defective platelet aggregation with thrombocythemia and impaired aggregation in response to epinephrine and adenosine diphosphate.[11]

We suggest that, in the patients presented, thrombocytosis with impaired platelet function may have contributed to the development of hemorrhagic joint effusions. Myeloproliferative disease should therefore be considered in the differential diagnosis of painful hemarthrosis, particularly in older patients.

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IMMUNOFLUORESCENCE IN DIFFERENTIATING THE IMMUNOPATHOGENESIS OF RENAL DISEASE

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Immunofluorescence study of routine renal biopsy specimens is important in detecting the immunopathogenesis of glomerular and tubular injury. Identification of the immunopathogenesis of renal injury provides insight into the possible etiology of the disease process in each nephritic patient. The physician should avail himself of this type of information routinely on all renal biopsies either by performing immunofluorescence locally or by sending a portion of the biopsy to a center that performs the technique as a service. This knowledge can eventuate in an immunologically specific form of management by directing interruption of an immunologic response or removal of an antigenic source.

The technique of immunofluorescence is quite simple. Antibodies specific for serum proteins or glomerular-bound antigens of interest are conjugated to a fluorochrome such as fluorescein isothiocyanate. With proper antisera, serum constituents such as immunoglobulins, complement and fibrinogen can be sought, whether bound in glomeruli or in extraglomerular structures. Sections from frozen biopsy specimens are stained with the fluoresceinated reagents and viewed with a fluorescence microscope. When a fluorochrome is exposed to a light of one wavelength, it becomes excited and emits a secondary light of longer wavelength. For example, fluorescein isothiocyanate is maximally excited at 490 nanometers and emits a secondary light of 517 nanometers. One views the fluorescent secondary light by inserting a barrier filter in the optical path to exclude the exciting light, allowing only the secondary light to pass. For a complete description of the technical problems that are involved, I refer you to a recently published editorial.[1]

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Two major immunopathogenic mechanisms of renal injury have been identified in man.[1, 2, 3] In one, antibodies react with antigens in the glomerular basement membrane (GBM), so-called anti GBM antibodies. Since these antibodies react all along the GBM, they appear by immunofluorescence as smooth, linear, continuous deposits of immunoglobulin. In the other mechanism, antibodies react with nonglomerular antigens in the circulation to form immune complexes. The immune complexes deposit at random along the GBM where they can be identified as discrete, granular accumulations of immunoglobulin. Examples of these two types of immunoglobulin deposition in human renal tissue appear in Figure 1. On the left (Fig. 1A), anti GBM antibodies can be seen reacting with and outlining the GBM as if the entirety of the basement membrane had been painted with the fluorescent reagent. Immune complex glomerulonephritis is shown on the right (Fig. 1B). At particularly well focused portions of the GBM, one can actually count the number of individual immune complex deposits that are present, which emphasizes the fact that the accumulation is distinctly granular.

Immunofluorescence studies are essential in differentiating the immunopathogenic process of glomerular injury in each individual patient. Either antibody induced form of glomerular injury can produce virtually the entire spectrum of histologic glomerular alterations observed in renal biopsies, because either anti GBM antibodies or antibodies in the form of immune complexes deposited in the glomerulus trigger common mediators of immunologic injury. For instance, complement is activated and causes polymorphonuclear leukocytes to accumulate and subsequently release enzymes that can damage the basement membrane. The kinin and coagulation systems, which share activators with the complement system, may also be involved, and vasoactive substances may also be released when antigen-antibody reactions occur. Apparently, the resultant renal damage with its characteristic histologic and clinical features is more related to the intensity of the immunologic reaction and the host's response to it than to the inciting mechanism per se.

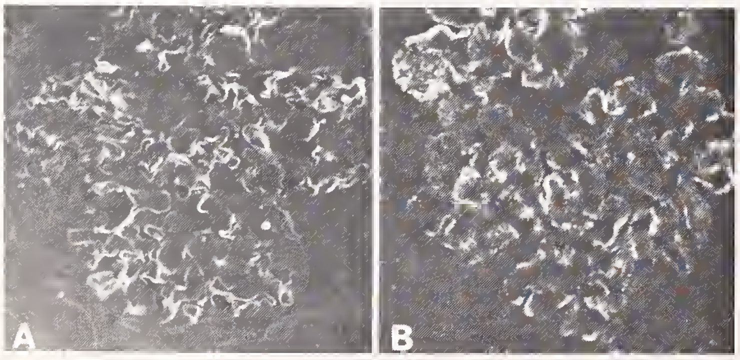

Figure 1
A. Uniform linear deposits of IgG are present along the GBM of a glomerulus from a patient with anti GBM antibody associated Goodpasture's syndrome.
B. Innumerable fine granular deposits of IgG are present diffusely along the GBM of a patient with presumed immune complex induced membranous glomerulonephritis. (Stained with florescein isothiocyanate-conjugated rabbit antihuman IgG antiserum, original magnification X 250.)

We have studied roughly 2,000 human renal biopsies with immunofluorescence in the last four years. About half of the patients in our series had granular deposits of immunoglobulin within glomeruli, presumed to be immune complex deposits. Most of the kidneys studied in this series were sent to us from transplant or transplant-related nephrology programs only after the renal disease was advanced. At that point, it is difficult to identify an immunopathogenic process. If one has samples obtained earlier in the course of glomerulonephritis, upwards of 70-80% of glomerulonephritic kidneys have granular immunoglobulin deposits. About 5% of our patients had linear deposits of immunoglobulin along the GBM, which were taken as presumptive evidence of anti GBM antibody induced glomerulonephritis. Occasionally, immunoglobulin accumulates in the GBM without an immunologic cause. Therefore, it is important to confirm the diagnosis either by dissociating (eluting) the immunoglobulin from the kidney for *in vitro* testing or by demonstrating the presence of circulating anti GBM antibodies with indirect immunofluorescence or radioimmunoassay. About one-third of the patients in our series had no immunoglobulin or complement deposits detectable by immunofluorescence.

Ten percent of our biopsies had complement deposits alone. This interesting group was comprised largely of kidneys with advanced renal disease and, in some patients, seemed to be an end-stage of immune complex induced glomerulonephritis with continuing complement deposition generated through the recently redescribed alternative complement pathway. In other patients nonimmune complement activation and deposition through alternative complement activation may represent an additional pathogenic mechanism leading to glomerular injury.

It is now known that complement may be activated by at least two distinct pathways.[4] One, termed the classical pathway, utilizes the C1q subunit of C1 to recognize alterations in antibody molecules once they have combined with antigen. Through a series of enzymatic steps involving C2 and C4, C3 is activated which leads to conversion of the remainder of the complement sequence with release of biologically active products. A second or alternative complement activating pathway involves several as yet incompletely defined steps, including properdin and C3b, to directly activate C3 and the terminal sequence in the absence of immunoglobulin or participation of C1, C2 or C4. With immunofluorescence one can often define the route of complement activation in renal tissue by using fluoresceinated reagents specific for initial components of the classical complement pathway, such as C1q or C4, as well as antisera specific for individual complement components from C3 through C9, which are shared by both pathways. Reagents specific for properdin and other proteins utilized by the alternative complement pathway can also be used.

Defining the pathway of complement activation adds additional information to the study of the immunopathogenesis of glomerular injury. For instance, much of the interest in this area has focused on a form of hypocomplementemic glomerulonephritis seen most frequently in the pediatric population and termed membranoproliferative or mesangiocapillary glomerulonephritis.[5] In this disease, C3 and terminal complement components may appear in glomeruli without immunoglobulin or the initial complement components, C1q and C4, suggesting alternative complement pathway activation. Factors are also present in the circulation of some of these hypocomplementemic patients which are capable of activating complement again via the alternative complement pathway. The precise role of this nonimmune activation in the production of glomerular injury is not yet clear. On the other hand, the majority of immune complex induced glomerulonephritides characterized by granular immunoglobulin deposits have heavy accumulations of both initial (C1q, C4) and terminal complement component deposition, suggesting activation of the classical complement pathway. Of interest, roughly one-third of patients with anti GBM antibody induced glomerulonephritis have no detectable glomerular complement deposits suggesting that some other mediator system must be involved in producing the renal injury in these patients.

Fixation of anti GBM antibody to the GBM is central in the immunopathogenesis of anti GBM glomerulonephritis. The antibody may be induced experimentally in animals immunized with basement membrane containing tissue and has been found to contaminate certain antilymphocyte globulin preparations used as immunosuppressive agents in humans with renal transplants; these latter antibodies can induce fatal glomerulonephritis in subhuman primates. In man (and in the horse), anti GBM antibodies form spontaneously. The factors responsible for this formation are not well understood; however, some features warrant comment. Endogenous antigens cross-reactive with the GBM are present in the circulation and are excreted in the urine. Possibly, instead of being eliminated, this material could be reintroduced and become immunogenic. Other possible immunogenic events have been suggested in patients with one form of anti GBM glomerulonephritis and pulmonary hemorrhage (the so-called Goodpasture's syndrome); some of these patients have had an influenza A2 infection or an unusual exposure to hydrocarbon solvents. Either condition might somehow alter basement membrane material, possibly in the lung, rendering it immunogenic. Materials cross-reactive with the basement membrane, perhaps from bacterial infection, might also be introduced from the environment.

Anti GBM antibodies most often cause rapidly progressive glomerulonephritis. Approximately half of patients with anti GBM glomerulonephritis have pulmonary hemorrhage designated clinically as Goodpasture's syndrome which may occasionally prove fatal.[6] The alveolar basement membrane in the lungs of such patients may contain linear deposits of immunoglobulin that could be responsible for the observed injury. Indeed, antibodies that cross-react with the kidney can be eluted from the lungs of such patients and experimentally, potent nephritogenic anti GBM antibodies can be induced by immunization with lung. Currently, it is unclear why some patients have the pulmonary component of the disease and others do not.

Spontaneous production of anti GBM antibodies is notably transient, lasting for a mean period of about seven months. That is, tolerance to this antigen is broken for only a short period of time.

If the damage induced by these antibodies is not severe enough to result in fatal pulmonary hemorrhage or irreversible renal damage, the patient may well recover.

In addition to the linear deposits of immunoglobulin along the GBM, linear immunoglobulin deposits in the tubular basement membrane (TBM) have recently gained the attention of those diagnosing anti GBM glomerulonephritis, and roughly 70% of such patients have antibodies that react with TBM as well as GBM. In kidneys with very advanced stages of anti GBM glomerulonephritis, the tubular staining may be the only clue to the diagnosis when the glomeruli and GBM are so damaged that characteristic linear staining can no longer be identified. The deposition of immunoglobulin along the TBM (Fig. 2A) presumably contributes to the tubulo-interstitial component of renal injury which in the past was said to be secondary to glomerular damage.

Anti TBM antibodies can also occur unassociated with anti GBM antibodies. Occasionally, recipients of renal allografts have developed anti TBM antibodies. In one example studied in our laboratory, a patient developed antibodies reactive with the TBM of his transplant but not of his native kidneys, suggesting that he had responded to a TBM antigen in the transplant that he himself lacked.[7] Strain specific TBM antigens have also been identified in rats, and if a TBM antigen positive kidney is transplanted into a rat of a TBM-negative antigen strain, the rat forms anti TBM antibodies in response to this neoantigen.

Anti TBM antibodies were also found in a patient with methicillin associated interstitial nephritis.[8] By immunofluorescence, a linear deposit of immunoglobulin along the TBM indicated that antibodies reacted with this structure. Antisera reactive with the dimethoxyphenylpenicilloyl breakdown product of methicillin demonstrated the presence of this substance along the TBM as well, suggesting that it had bound to the TBM in conjunction with its excretion by the kidneys. The protein hapten conjugate had presumably induced antibodies reactive with the TBM, the carrier portion of the protein hapten complex. Indeed, the patient had circulating antibodies that reacted with TBM of normal renal target tissue, and presumably once deposited, this antibody contributed to his tubulo-interstitial damage.

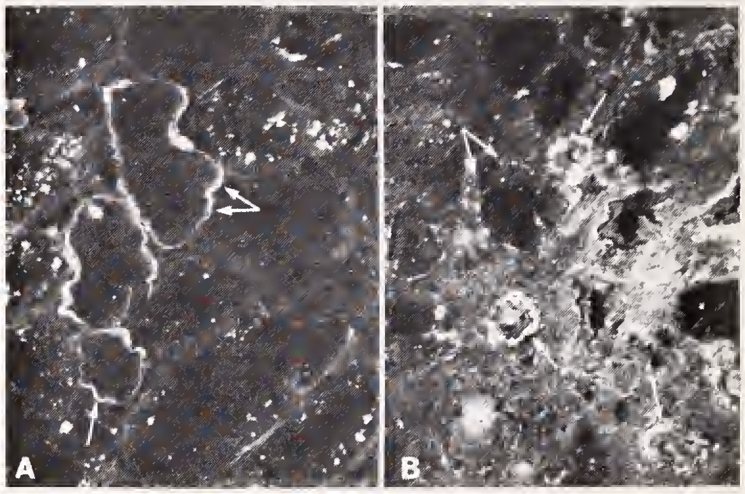

Figure 2
A. Smooth linear deposits of IgG (arrows) are identified along the TBM of a few renal tubules in a section from the kidney of a patient with anti GBM antibody induced rapidly progressive glomerulonephritis.
B. Variable quantities of granular IgG deposits (arrows) are seen in the TBM of several renal tubules and to a lesser extent in the interstitium and peritubular capillaries of renal tissue obtained from a patient with glomerulonephritis, and systemic lupus erythematosus. (Stained with fluorescein isothiocyanate-conjugated rabbit anti-human IgG antiserum, original magnification X 250.)

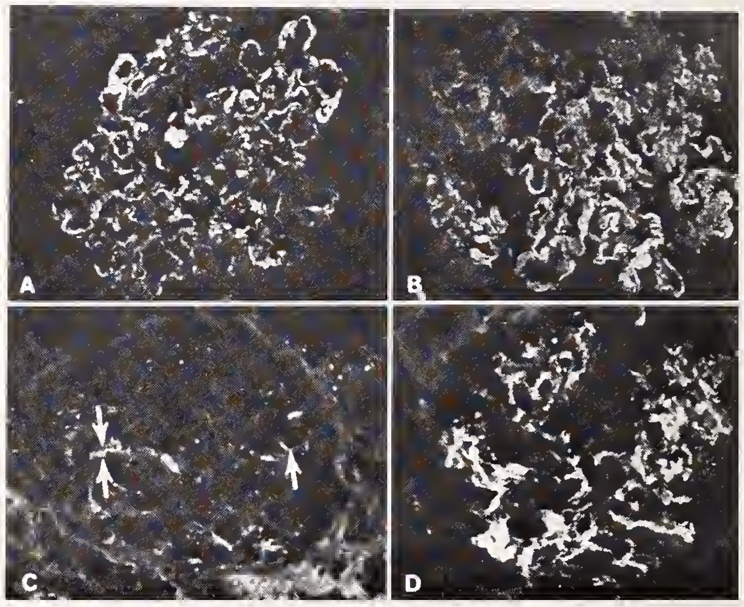

Figure 3
Multiple patterns of granular IgG deposition are encountered in patients with presumed immune complex induced glomerulonephritis.
A. Rather coarse granular deposits of IgG are present diffusely along the GBM of a glomerulus from a patient with membranous glomerulonephritis.
B. In contrast, the granular deposits are much finer, yet distinct, in the GBM of another patient with membranous glomerulonephritis.
C. Very sparse and segmental granular deposits of IgG are identified in the GBM of a patient with mild and segmental proliferative glomerulonephritis.
D. Striking granular deposits of IgG are present in the glomerulus of a patient with systemic lupus erythematosus and mild focal glomerulonephritis. Note that in contrast to the GBM distribution of the deposits in Figures 3A and 3B, the deposits in this patient are largely confined to the mesangial stalk area of the glomerulus. (Stained with florescein isothiocyanate-conjugated rabbit antihuman IgG antiserum, original magnification X 250.)

TABLE I

Summary of Immunofluorescence Glomerular Deposits

	IgG	IgA	IgM	C3	FRA
Linear Pattern					
Anti GBM GN	++++*	±	±	++	+++
Granular Pattern					
Primary GN					
Proliferative GN (including post-strep GN)	++	±	±	+++	±
Rapidly progressive GN	+++	±	±	+++	++++
Membranous GN	++++	±	±	+++	±
Focal GN	++	+++	++	+++	±
Membranoproliferative GN	++	±	±	++++	±
GN of Systemic Disease					
HS purpura	++	+++	±	+++	++
SLE	++++	++++	++++	++++	±

*Graded on a 0—++++ scale, ± indicating variable presence

Abbreviations: GN — glomerulonephritis, FRA — fibrin-related antigens, HS — Henoch-Schonlein, SLE — systemic lupus erythematosus.

In patients with immune complex induced glomerular injury, multiple patterns of granular immunoglobulin deposition may be detected by immunofluorescence of glomerular tissue (Fig. 3). In some instances, the distribution is very uniform, generalized and distinctly granular. Even then, the individual deposits may vary in size (Fig. 3A, 3B). Sometimes we see very fine granular deposits so close together that they look almost confluent or linear, which stresses the need for optimally prepared sections and examination under high magnification. The deposition may also be minimal and limited to segments of the GBM (Fig. 3C). In more focal forms of glomerulonephritis immune complex deposition may be largely confined to the mesangial stalk, the phagocytic cells which form the tree trunk structure of the glomerulus (Fig. 1D). The patterns of immunoglobulin, complement and fibrin deposition seen in various forms of glomerulonephritis are summarized in Table I. I must emphasize that this is a generalization and exceptions certainly occur. For contrast, the findings in anti GBM glomerulonephritis have been added to the table.

In general anti GBM glomerulonephritis is characterized by IgG deposits, less frequently C3 and often striking amounts of fibrin. (We call this fibrin-related antigen (FRA), since the reagents react with fibrinogen, fibrin and some of the split products.) In the immune complex form of glomerulonephritis, several histologic and clinical responses can occur as we have noted earlier. Patients with streptococcal glomerulonephritis, a proliferative type of glomerular response, usually have IgG, more prominently C3 and often little fibrin. Tissue from immune complex induced forms of rapidly progressive glomerulonephritis may have heavy granular deposits of IgG and C3, varying amounts of IgA and IgM and heavy deposits of fibrin in areas of crescent formation. Membranous glomerulonephritic sections usually have heavy deposits of IgG and C3 with variable amounts of IgA, IgM and little fibrin. Patients with systemic lupus erythematosus develop several histologic glomerular lesions varying from focal, to diffuse proliferative or membranous glomerulonephritis. Immune complex deposition varies accordingly, but is usually typified by granular deposits of IgG, IgA, IgM, and in most instances, heavy deposits of C3 as well as C1q with fibrin occurring only in the more active proliferative cases. In the proliferative and often focal glomerular lesion of Henoch-Schonlein purpura, IgA is a prominent immunoglobulin in what can be described as a mesangial pattern, and unusual amounts of fibrin are present as well. Some patients with recurrent hematuria and focal glomerulonephritis tend to have heavy IgA deposits with lesser amounts of IgG.[9] Other patients with focal glomerulonephritis have IgM deposits. Rather striking amounts of C3 are also observed in focal glomerulonephritis, and the pattern of deposition tends to be more in the mesangium than in the glomerular periphery. Of course, all of the forms of glomerulonephritis overlap, both in pattern and in immunoglobulin class, so that although these breakdowns are of value, they may not always correlate with the histopathology that is observed.

Before immune complex glomerulonephritis can develop, antigens, either endogenous or exogenous, must first lead to antibody formation; subsequently, these antibodies must react with the antigenic material to form circulating immune complexes. The majority of the circulating immune complexes are cleared harmlessly from the circulation by the reticulo-endothelial system. Apparently, less than 1% of the complex material deposits within the glomerular filter. The antigen-antibody deposits retained in the glomerulus can injure the kidney either by activating complement with attraction of polymorphonuclear leukocytes or by bringing into play other mediators of immunologic injury as we have described for anti GBM antibodies.

Several features of immune complex deposition have been studied.[10] The size of antigen-antibody complexes is important, with complexes larger than 19S tending to deposit in glomeruli. The avidity of the antibody involved in immune complex formation is probably also important because it would contribute to the stability of the immune complex. Vasoactive substances released in conjunction with immune reactions may cause changes in the permeability of basement membranes and have been shown to influence the glomerular deposition of immune complexes. Phagocytic mesangial cells within the central portion of the glomerular loop appear to pick up immune complex material and reduce its phlogogenicity compared to that of immune complexes lodged in the peripheral GBM. The mesangium then seems to play an early and perhaps protective role in handling immune complex material. Some patients with focal glomerulonephritis evidently go no farther than mesangial deposition when the entire immune complex load is small enough to be dealt with there. Large complexes also tend to deposit preferentially within the mesanigum.[11]

A list of antigen-antibody systems identified in human immune complex glomerulonephritis is shown in Table II. Many of these antigens have been detected within glomeruli by immunofluorescence techniques. The list is divided in accord with the antigenic source, be it endogenous or exogenous. Foreign proteins and drugs can induce serum sickness varieties of immune complex glomerular injury. Antigenic material derived from infectious agents appears to be the most common source of exogenous antigenic stimulation. For example, bacterial antigens relate to several forms of immune complex glomerulonephritis. Streptococcal antigens have been identified in poststreptococcal glomerulonephritis. Staphylococcal antigens were found in the glomerulonephritis that is associated with infected ventriculoatrial shunts in hydrocephalic children. Enterococcus emerged in at least one case of immune complex glomerulonephritis associated with subacute bacterial endocarditis. Salmonella antigens were observed in the immune complex glomerulonephritis that accompanies typhoid fever. Plasmodial and parasitic antigens also occur in immune complex glomerulonephritis in geographical areas in which these infections are endemic. These include plasmodial antigens in quartan malarial infections in African children and antigens from other parasitic infections such as filariasis and schistosomiasis. Experiments in animal models suggest that viral antigens are a common source of antigens that become nephritogenic immune complexes. In man viral antigens have been identified in the glomerulonephritis that is associated with hepatitis *B* infection, and oncornaviruses-related antigens were tentatively identified in immune complex glomerulonephritis in patients with lymphoma-leukemia. Glomerular bound measles antigens have been reported in patients with subacute sclerosing panencephalitis and Epstein-Barr viral antigens have been seen in patients with glomerulonephritis and Burkitt's lymphoma.

TABLE II
Antigen-antibody Systems in Human Immune Complex GN

- Exogenous antigens
  - Foreign serum proteins, drugs — serum sickness
  - Bacterial antigens — poststreptococcal GN, "shunt" GN, subacute bacterial endocarditis, syphilis, typhoid, leprosy
  - Parasitic antigens — plasmodium malariae, filariasis, schistosomiasis
  - Viral antigens — hepatitis B, measles, oncornavirus, Epstein-Barr
- Endogenous antigens
  - Nuclear material, thyroglobulin, renal tubular brush border, carcinoembryonic antigen, immunoglobulin (cryoglobulin).

Endogenous antigens or parts of self may also be involved in nephritogenic immune complex formation. Certainly, lupus erythematosus is the best example of this, in which a multiplicity of nuclear materials and other self antigens may be involved in immune complex formation. These patients also form aggregates of immunoglobulin that occur as cryoglobulins containing rheumatoid factors which appear to contribute to the glomerular deposition.

Antigens derived from the brush border of the proximal renal tubule have also been identified in human immune complex induced glomerulonephritis. A model of this type of glomerulonephritis was developed in rats some years ago by repeated intraperitoneal injections of rat kidney in adjuvant. The immunization led to a membranous glomerulonephritis after several months with the involved antigen shown to be a constituent of the renal tubule. In Japan, a similar system has been observed in at least three patients with membranous glomerulonephritis and has also been tentatively identified in patients with sickle cell associated glomerular injury. Here then is a renal but nonglomerular antigen that is involved in immune complex formation. Thyroglobulin-antithyroglobulin immune complexes may also induce glomerulonephritis in patients with thyroiditis, particularly when the balance of antigen and antibody is shifted by therapeutic maneuvers to favor formation of nephritogenic immune complexes. Carcinoembryonic antigen has been reported in immune complex glomerulonephritis in association with colonic carcinoma.

Hosts of other presumed immune complex glomerulonephritides should have identifiable antigen-antibody systems, including those associated with gold and other drugs and infections such as varicella, infectious mononucleosis, syphilis and leprosy. The etiology of other diseases, such as neoplasms and sarcoidosis, may become clear once we identify the nature of antigen-antibody systems responsible for the glomerulonephritis that sometimes complicates the clinical picture. The kidney, then, could serve as a trap to gather immune complex material for use in detecting the etiology of a disease of obscure causation.

Just as with anti GBM glomerulonephritis, immune complex glomerulonephritis has extraglomerular deposits.[13] This is a point that really has been overlooked for a long time and is now gaining considerable attention. Figure 2B shows the tubular interstitial area of a patient with systemic lupus erythematosus who has heavy granular deposits of immunoglobulin accompanied by complement along the TBM. The extraglomerular immune complex deposits may involve TBM, peritubular capillaries, and the interstitium diffusely and may also be heavy in arterioles. Patients, then, with immune complex renal disease must be classified according to the extent of the immune complex deposition, noting whether the immune complexes are localized largely in the glomerulus, which is true in membranous glomerulonephritis, or whether they are widespread as in systemic lupus erythematosus. Indeed, 70 to 80% of patients with lupus glomerulonephritis have widespread immune complex deposition in TBM, peritubular capillaries, and arterioles if you look outside the glomerulus, and may have extrarenal deposits, for example in the choroid plexus, as well. This is very consistent with the systemic nature of the immune complex disease of lupus erythematosus as compared with the fairly localized or restricted immune complex disease that one sees in primary glomerulonephritides.

In summary, I have discussed immunofluorescence techniques as being essential for differentiating anti GBM from immune complex induced glomerulonephritis. Clearly, deposition of immune reactants is not confined to the glomerulus, both anti GBM antibodies and circulating immune complexes can accumulate in extraglomerular structures, presumably contributing to tubulo-interstitial injury, which is so common in glomerulonephritis. Finally, a brief mention was made of a possible third mechanism of inducing kidney disease through nonimmunologic activation of the alternative complement pathway, which can also be studied by using immunofluorescence.

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NEUROLOGICAL AND MEDICAL AFFLICTIONS RECORDED BY PRE-COLOMBIAN MEXICAN CRAFTSMEN

ENRIQUE L. LABADIE, M.D.

ABSTRACT

The pre-Colombian Mexican nation, headed mainly by the Aztecs, Toltecs, Mayan and Mixtec-Zapotecs, produced a remarkable civilization in North America. In the medical field their most renowned contributions were those of nutritional and medicinal botanics. However, their acumen on empirical clinical observations was enviable.

Presented here are photographs of artistic stone sculptures as well as ceramic artifacts that portray some of their medical and neurological afflictions. These are as follows: two examples of parturition; two suture-repaired facial wounds; two third nerve palsies; one probable case of myasthenia gravis; one case of congenital scoliosis; one hemiplegia example and one outstanding case of retro-orbital tumor with a therapeutic craniotomy.

After a detailed review and discussion of these samples, it seems not farfetched to assume that at least some of these artistic objects were created by craftsmen serving out the physicians' recording wishes, who may have used these examples as teaching aides.

Some Nutritional Products Cultivated and Used by the Pre-Colombian Indian Cultures of Mexico and South America

SPANISH (as used in Mexico)	ENGLISH
Maiz	Corn
Papas	Potatoes
Frijoles	Beans (several Types
Chiles	Chiles (many types)
Vainilla	Vanilla
Chocolate (cacao)	Chocolate (cocoa)
Cacahuates	Peanuts
Jicama	Water Chestnuts (type)
Yuca	Yucca
Aguacate	Avocado
Camotes	Yams (several types)
Pinas	Pineapples
Papaya	Papaya
Tamarindo	Tamarindo
Mamey	
Pitaya	
Zapote	
Zapote Chico	
Chirimoya	
Guanabana	

TABLE 1

INTRODUCTION

Prior to the arrival of Europeans to America, the natives on this continent created remarkable civilizations.[1-3] The Mexican cultures, headed mainly by the Toltecs, Aztecs, Mayans and Mixtec-Zapotecs, achieved a preponderant role in North America.

In the medical field it seems that their foremost contributions were those in the botanical area. The Aztecs constructed special botanical nurseries into which they asidiously incorporated classified plants of empirical nutritional or medicinal value. It is believed that over 1000 varieties were available at the time of the Spanish conquest.[4] A few of those best known botanical examples are listed in Tables 1 and 2.[5]

Due to the fact that Torres Landa ordered the complete destruction of the Mexican Indian Library at Texcoco, only a scanty amount of their original medical recordings were preserved. Bernardino de Sahagun dedicated himself to the production of a book in which he attempted to reconstruct the lost Indian texts and in which he mentions the Aztec Physicians Doctrine Book (Tici amatl), as well as the Physicians Medical

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Some Medicinal Herbs Used by the Mexican and South American Pre-Colombian Cultures

SPANISH (as used in Mexico)	ENGLISH
Ipecacuana	Ipeca (emetic)
Coca	Coca Leaves (Cocaine)
Quinina	Quinine
Arnica	Arnica
Ruibarbo	Rhubarb
Ricino	Castor Oil
Peyote	Peyote
Mariguana	Marihuana
Tobaco	Tobacco
Jalapa	
Guayacol	
OTHER USES	
Hule	Rubber (Latex)
Chicle	Chewing Gum

TABLE 2

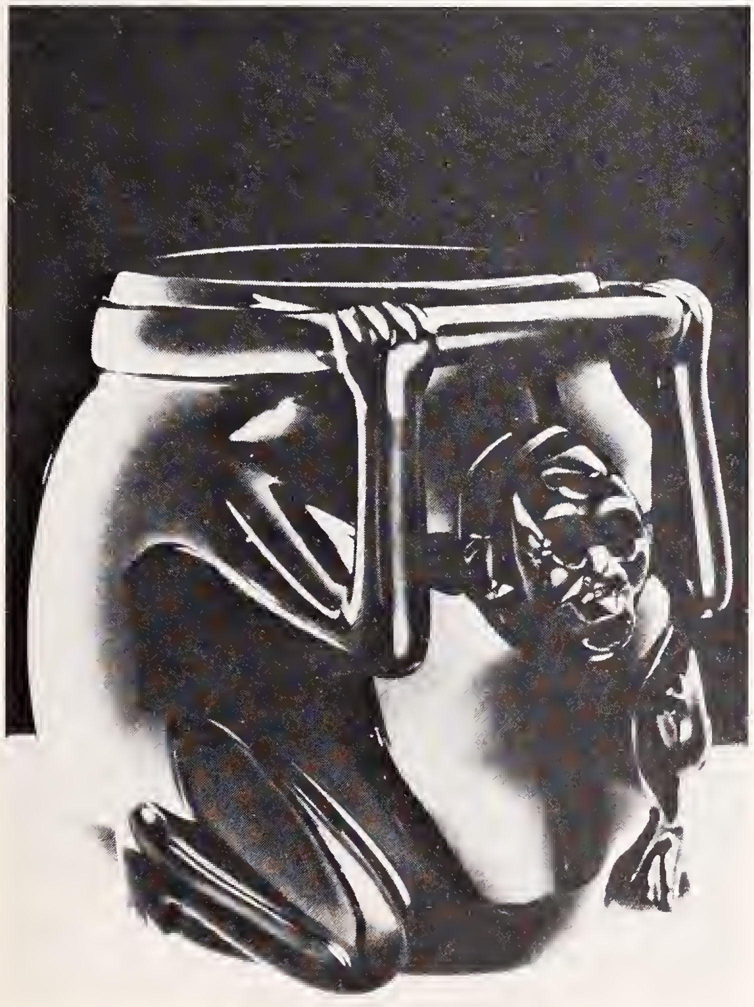

Figure 1
"Obsidian Monkey Vase." Most likely this is one of the two best craftsmanship examples produced by Aztec artists. This masterpiece was found in Texcoco and presently can be seen at the National Museum of Anthropology at Mexico City. (Courtesy of Architect Pedro Ramirez Vazquez, Ref. 2.)

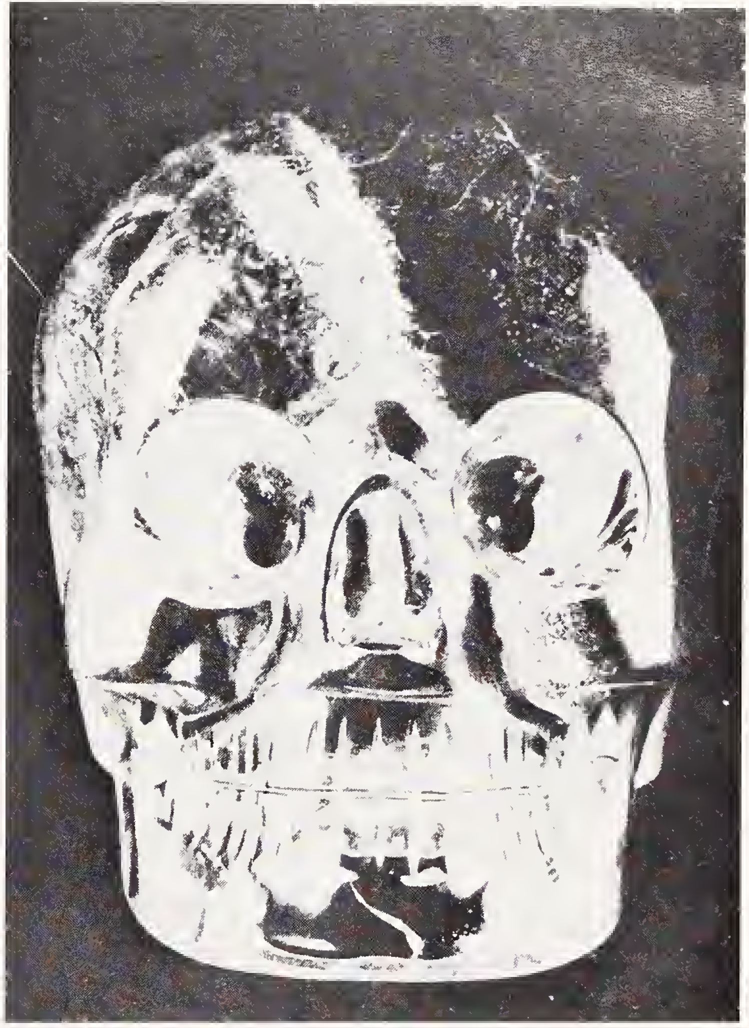

Figure 2
"Transparent crystal rock skull." Another Mexican masterpiece example, presently at the London museum in Great Britain. The type of tools used to produce these objects are today unknown to us. A very fine grit polish must have been used to achieve the smoothness and transparency.

Figure 2
Lateral view.

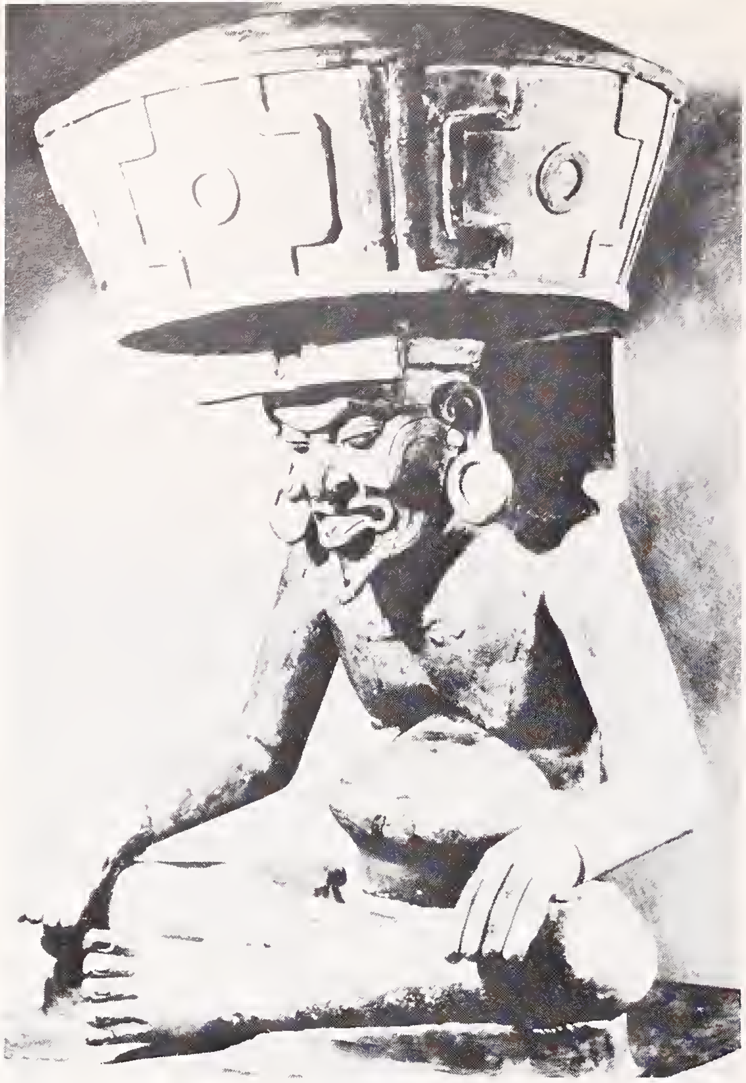

Figure 3A

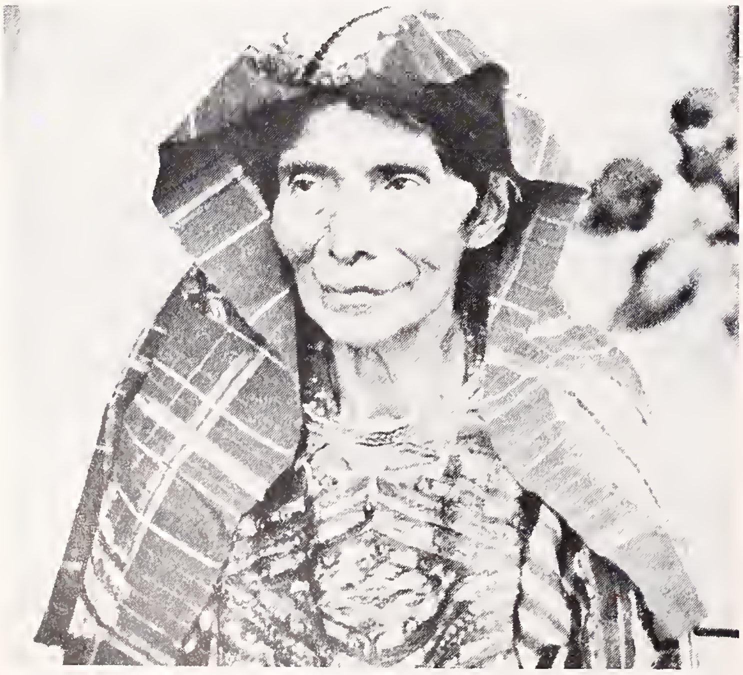

Figure 3B
An old Mexican lady, compare the facial features with those of Figure 3A. (Courtesy of Architect Pedro Ramirez Vazquez.)

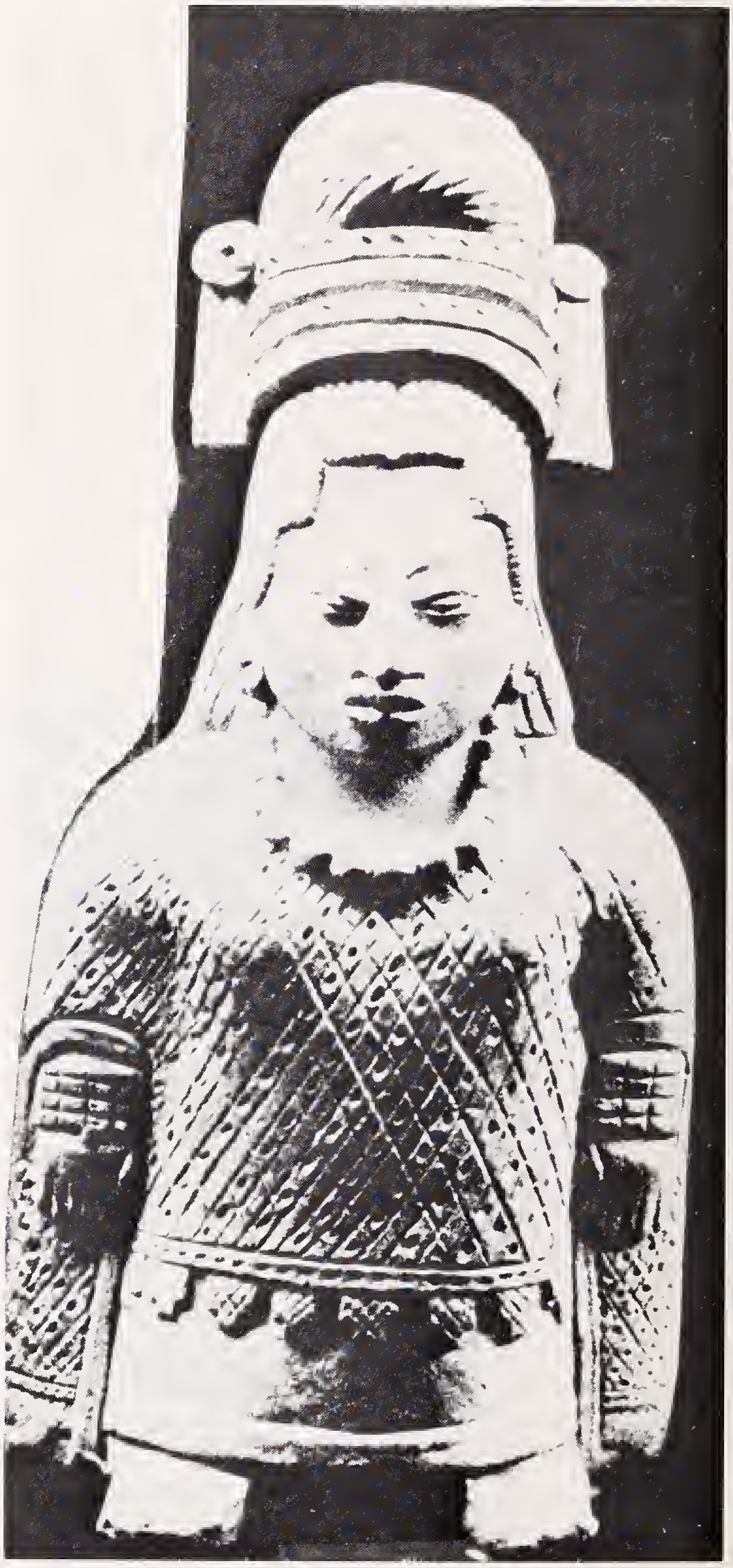

Figure 4A
Small ceramic figure showing a young Mayan woman with elaborate hair dressing (at Mexico City).

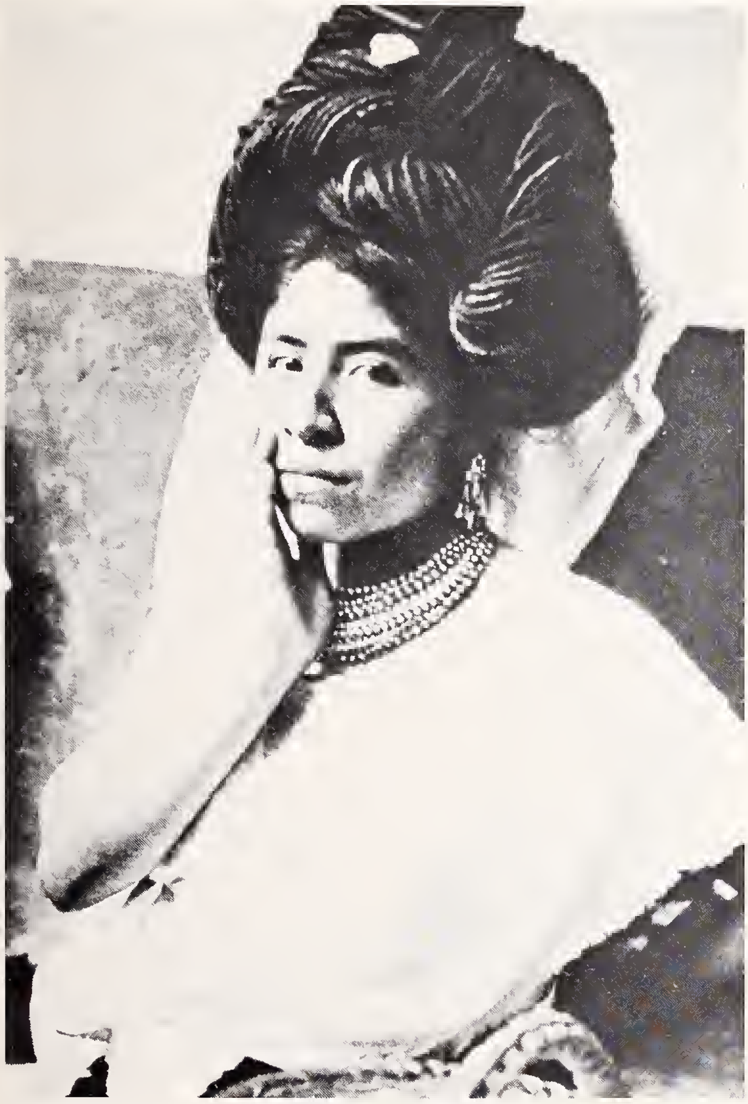

Figure 4B
Photograph of a young woman from the State of Puebla. Compare the facial features as well as the hairdressing with those in Figure 4A. The similarities are obvious. This strongly suggests that many of the ceramic artifacts found are actually true portraits. (Courtesy of Architect Pedro Ramirez Vazquez.)

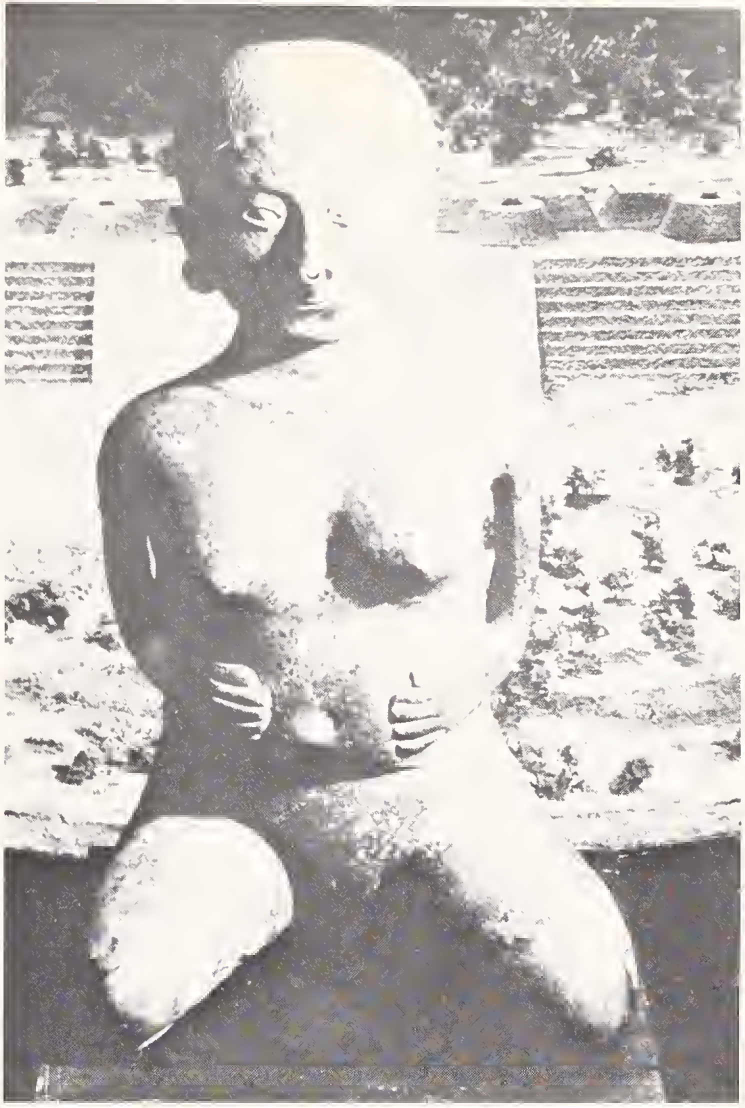

Figure 5
Ceramic artifact showing a nude young woman in the customary labor posture. (Courtesy of Architect Pedro Ramirez Vazquez.)

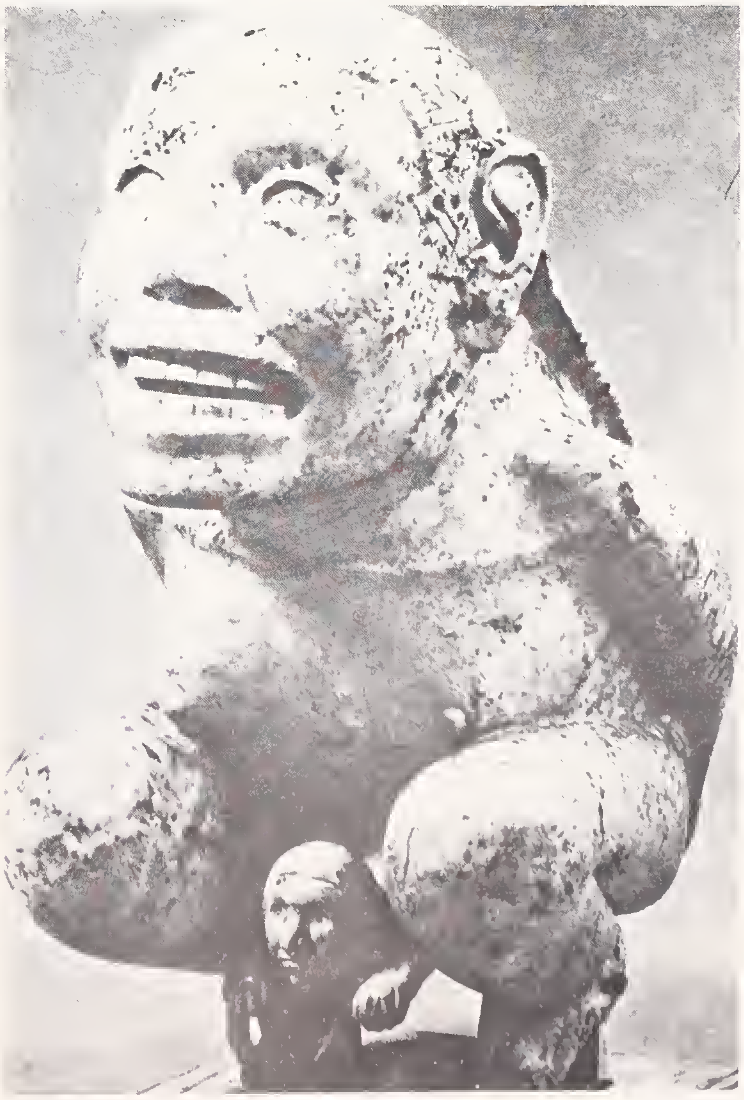

Figure 6
A second carved rock example of the customary labor posture. The facial features clearly denote her intense effort during the child's expulsion.

Art Book called Ticiotl.[4-6] Several authors have researched in great detail all aspects known about the medical concepts of the Aztec and Mayan cultures.[20-31]

The Mexican prehispanic cultures were quite competent in the art of dental care and prosthetic replacements.[14-19] They utilized hair as suture material, rubber (latex) for bandage dressings, external fixation techniques for fracture healing and many botanical remedies for analgesia and wound covering.[4-6, 20-31]

Through their portentious artistic capacity they produced magnificent gold objects of which only very few are in existence today.[1-2] Probably the two best craftsmanship examples available today are; the "obsidian monkey vase" at Mexico's City Museum of Anthropology and the "transparent crystal rock skull" at the London Museum in Great Britain, photographs of which are shown here (Figures 1 and 2.)

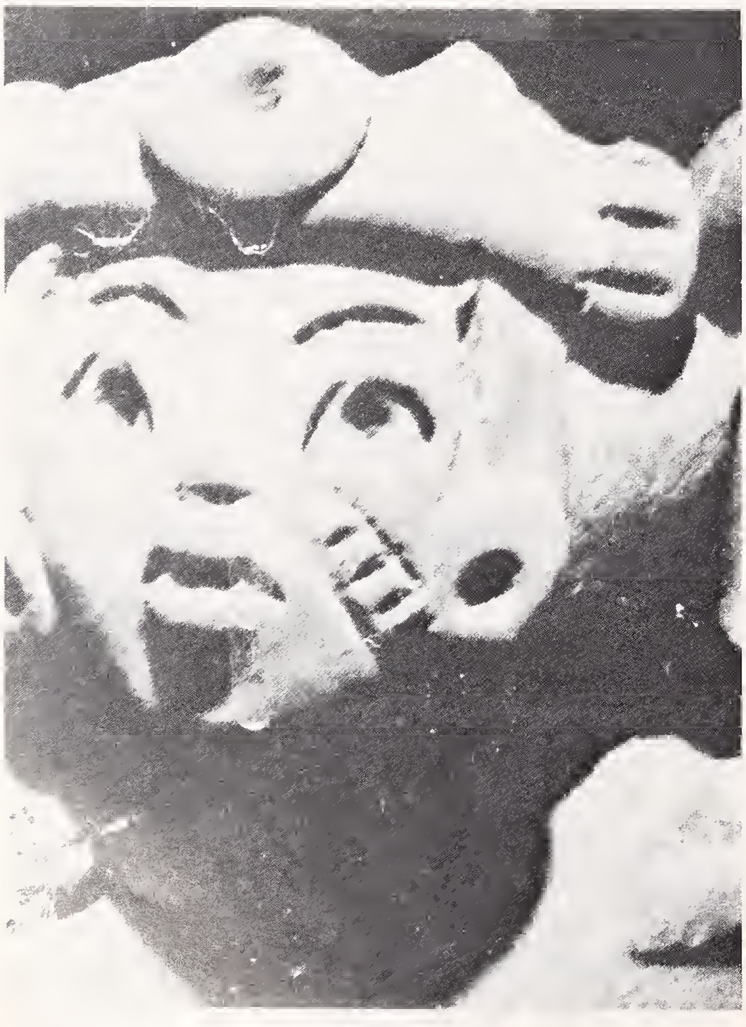

Figure 7
Ceramic face of a young woman with a left-sided suture repaired cheek scar. The Aztec surgeons utilized uninterrupted stitches with fine human hair (4). (Collection Lance-Wyman #4.)

In our modern medical literature very few articles exist dealing with those archeological objects that depict neurological and medical diseases. Goldman-Goldman and Weisman[8-13] have published several samples from their personal collections consisting of ceramic objects obtained mostly from the State of Colima in Mexico. Although these are invaluable and of great medical interest, they unfortunately are not entirely part of the sophisticated mainstream of the Mexican pre-Colombian culture, as this ethnic group has remained generally at a slightly more primitive level, somewhat comparable to the Southwest Indian cultures of the United States.

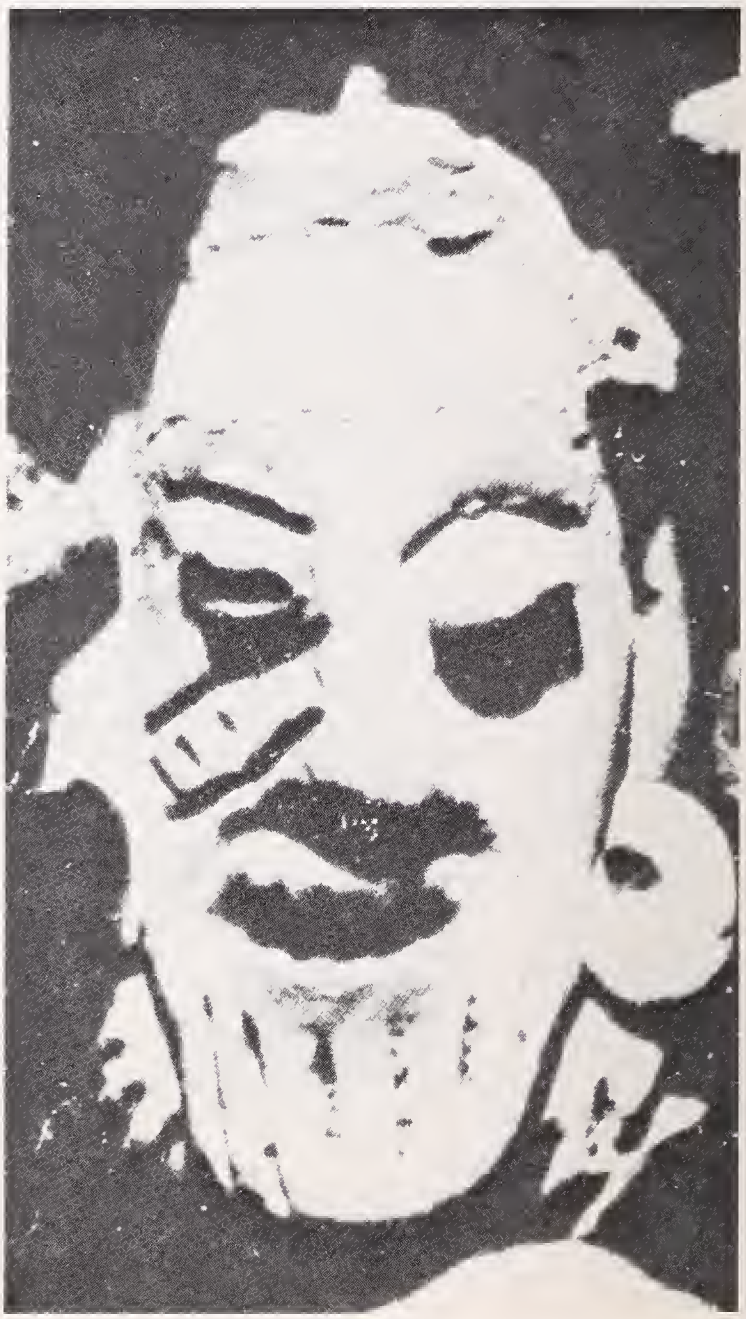

Figure 8
Shows an elderly man with a suture repaired facial wound. The left eyelid is presumably closed due to edema (?). (Collection Lance-Wyman #4.)

NEUROLOGICAL AND MEDICAL SAMPLES

The main purpose of this paper is to present a few samples that seemingly portray some of those afflictions suffered by the prehispanic Mexican. It must be emphasized that those ceramic or stone objects that represent human faces, frequently seem caricaturesque. Most, however, even the grotesque looking ones, if carefully matched and compared to nowadays Mexican individuals, are actually excellent facial portraits, as can be seen in two examples shown in figures 3a, b and 4a and b.

Figures 5 and 6 depict two women in their customary labor posture, one of which is actually in the second stage of labor. Two suture repaired facial wounds are seen in Figures 7 and 8. The Aztec surgeons utilized uninterrupted stitching with hair as the suture material.[4] Some other facial artifacts show evidence of tatooing, however these are bilaterally symmetrical and form contoured lines (see face of Figure 11).

Two excellent examples of third nerve palsies are presented. The first example (Figure 9) is that of a girl with left-sided ptosis and with the eye displaced laterally, owing to the pull of the intact external rectus (6th nerve). Figure 10 shows a complete left-sided ptosis in a man's face, which otherwise is symmetrical. The next figure (11) shows a tatooed faced man with prominent scoliosis. A similar example of vertebral deformity has been previously published by Goldman and Goldman[9] and as both come from the State of Colima, one wonders if they are due to endemic tuberculosis (Pott's disease).

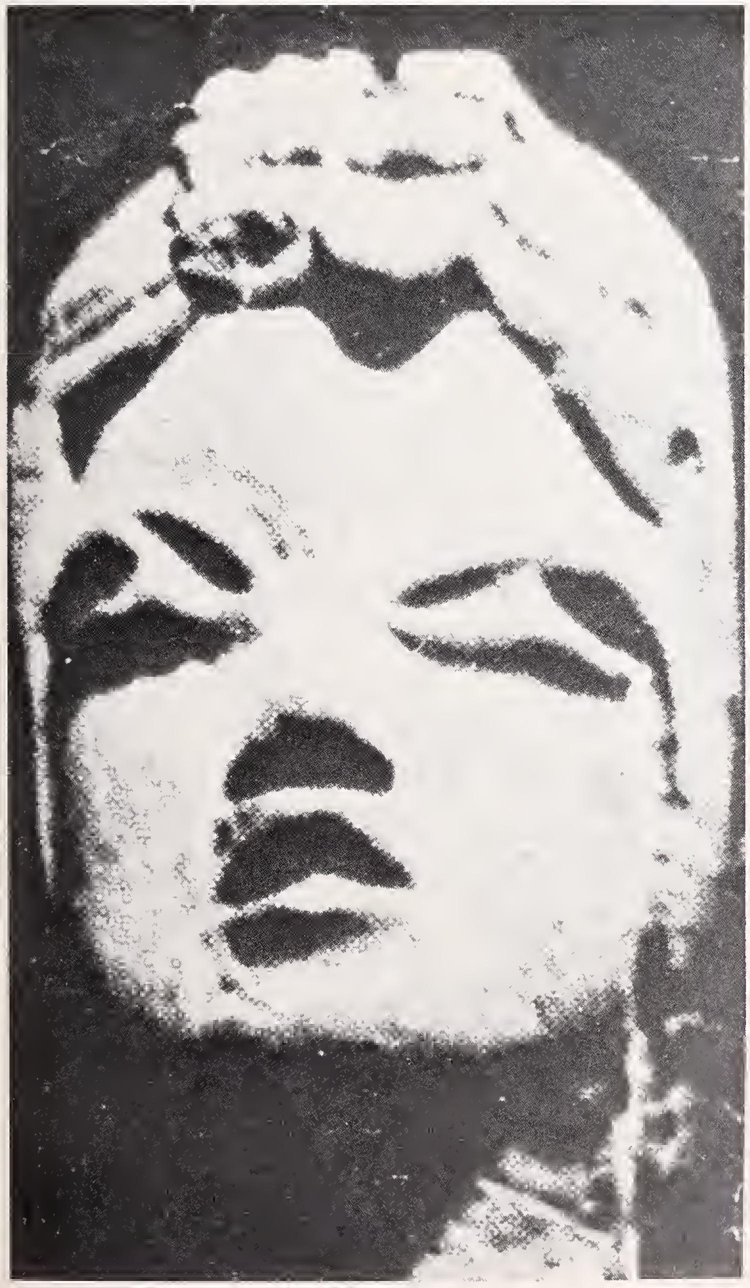

Figure 9
Extraordinary example of a left-sided third nerve palsy in a young woman. Aside from the left eyelid ptosis, the left eye is deviated laterally owing to the pull of the intact sixth nerve (external rectus muscle). (Collection Lance-Wyman #4.)

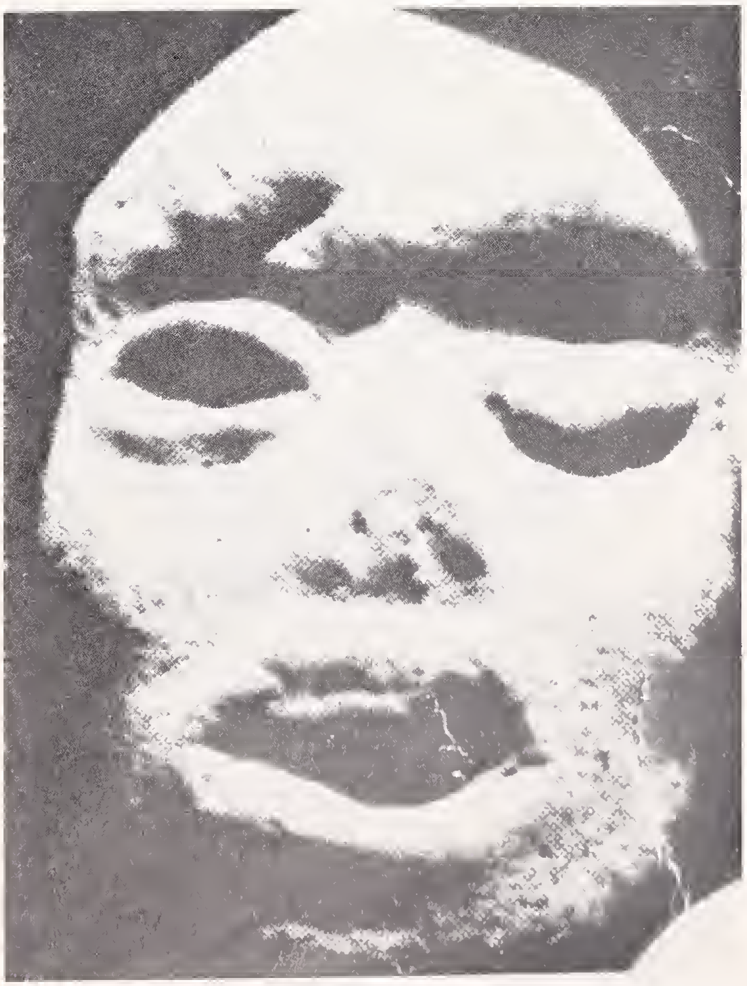

Figure 10
Another example of a complete third nerve palsy in young man. The left ptosis is complete but the face is symmetrically intact, which rules out a right-sided peripheral Bell's palsy (7th nerve). (Collection Lance-Wyman #4.)

Figure 12 shows an expressionless man with bilateral ptosis and with his mouth half open. On close examination it is noted that both eyebrows are forcefully raised. This last detail leads us to believe that this is an example of Myasthenia Gravis.[37-38] A photograph of one of our myasthenic patients is shown for comparison. Figure 14 shows a bas-relief from the ancient city of MonteAlban in Oaxaca (Mixtec-Zapotecs), a hemiplegic man is portrayed with his arm in the flexed posture with simultaneous external rotation of the ipsilateral leg. The last photograph shows a right-sided retrorbital tumor in a male, which is identical to those actual cases reported by Jackson.[32] The extraordinary detail in this sample is the fact that it depicts a therapeutic attempt by means of a midline burr-hole (Figure 14). It is well known that some of these cultures performed ritualistic cranial deformations to their children and frequently utilized burr-holes as a valid therapeutic approach.[33-36]

DISCUSSION

As previously shown, it is likely that many of their human sculptures may be in fact true portraits (Figures 3 A-B and 4 A-B). Although the examples here reported are well known to archaeologists[1-5] we could not find them mentioned in the English medical literature from the last decade to date.

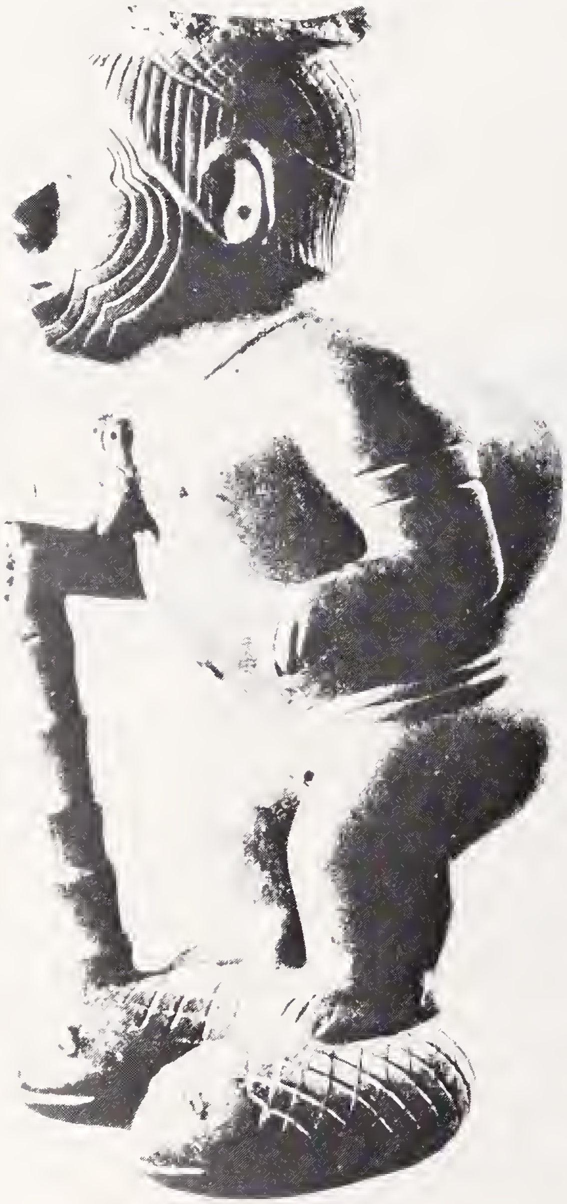

Figure 11
This detailed ceramic artifact from the State of Jalisco depicts a young man with a tatooed face and also having a pronounced scoliosis, using a cane for support. Goldman and Goldman[9] have previously published a similar example from the same region. One wonders if such frequency is due to endemic tuberculosis (Pott's disease). (Courtesy Pedro Ramirez Vazquez.)

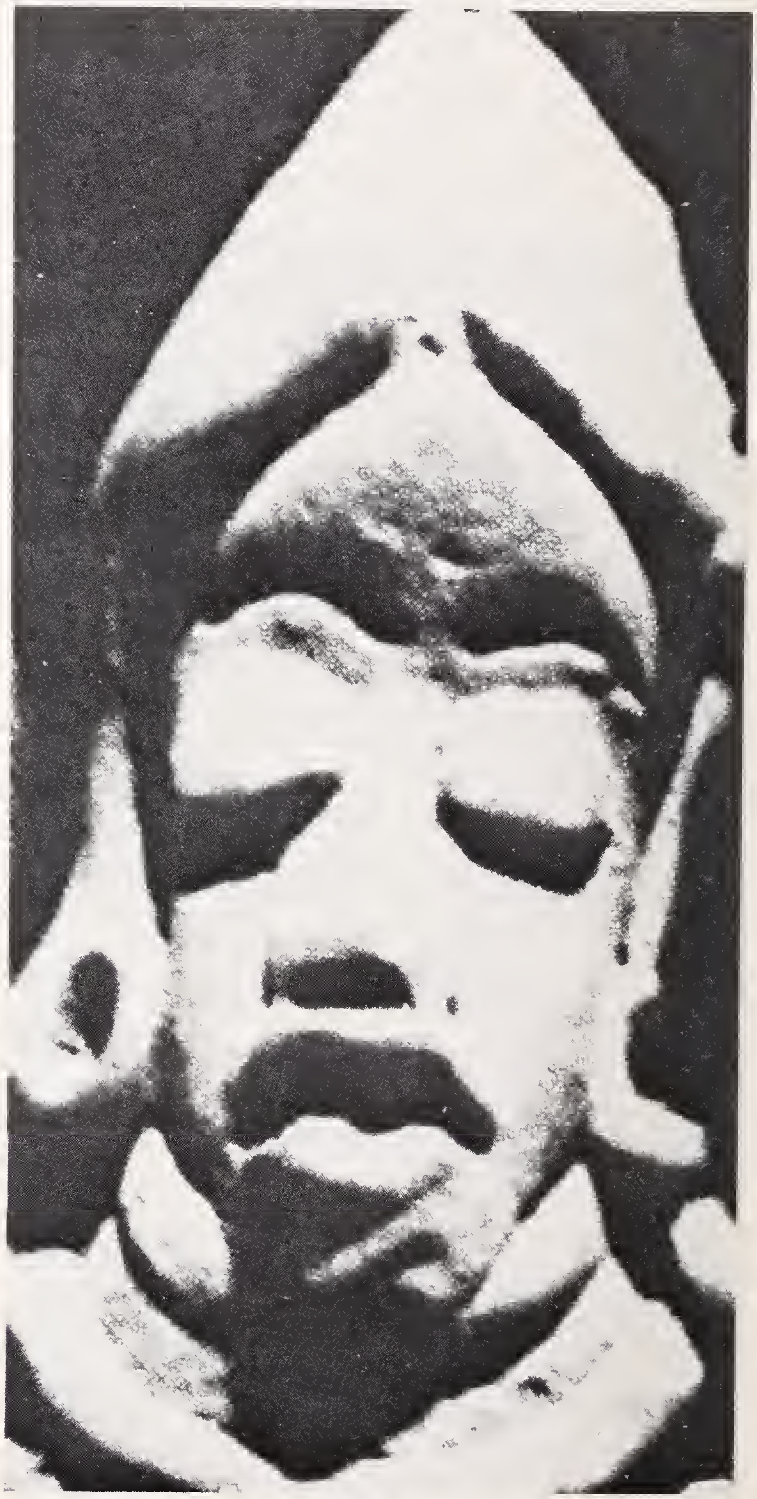

Figure 12
Shows an expressionless man with bilateral ptosis and whose mouth is half open. Note the forcefully raised eyebrows, detail which leads us to believe that this is an example of Myasthenia Gravis.[37-38] (Collection Lance-Wyman 4.)

Noting the carefully detailed craftsmanship displayed in most of these objects, one wonders how and why the artists took portraits of afflicted patients. It must be emphasized that this culture possessed sophisticated calendars, as they recorded accurate astronomical and historical events, including such details as landowners production tax, etc. They created carefully planned complex cities which included several well classified botanical gardens with such organization, that it marveled the Spanish conquerors.[3] In this setting it would be reasonable to assume that they would also keep accurate recordings of their common afflictions, as otherwise it would be difficult to believe that the portrayed patients had seeked the artist talents only for vanity reasons. It also seems unlikely that the craftsman himself, for financial reasons, would take it on his own to copy the features of those individuals to be later sold as an "artistic object." Furthermore, Figures 5, 6, 14 and 15 are shown naked, this being important because the large majority of those human representations that we have seen in the Mexican museums, are almost always dressed in full garments.[1-2] Another salient detail is seen in Figure 15, which apart from being nude, the artist clearly knew that a burr-hole had been placed. This fact leads us to believe that the attending physician had actually contracted the artist to copy this important case. It then seems not farfetched to accept that in some cases, the physicians of those sophisticated societies ordered craftsmen to record what they considered interesting cases, to later use this material as teaching aides, or even for public display, as in the case of the hemiplegic bas-relief at Monte-Alban (Figure 14).

Several authors have stressed that in these cultures, mystical ideas frequently permeated their physiopathogenesis concepts.[5, 20, 22, 28] However, this notion is detractive and misleading, for as one can see, their empirical clinical acumen was enviable. They carefully observed diseases, recorded them and in many instances undertook accurate therapeutic measures, most of which were quite successful and not very different from our refined modern approach many centuries later.[4, 6, 7, 9-10, 13-14, 19, 31, 34, 36]

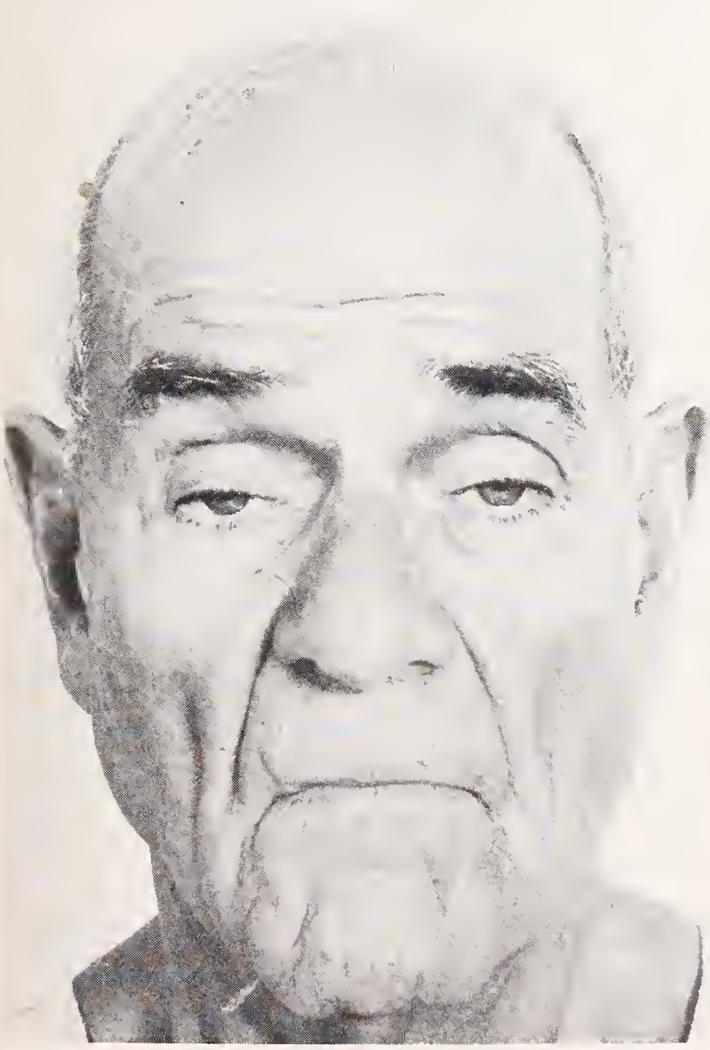

Figure 13
Photograph of one of our myasthenic patients with prominent ocular involvement, and shown here for comparison. Note the forcefully raised eyebrows as in Figure 12.

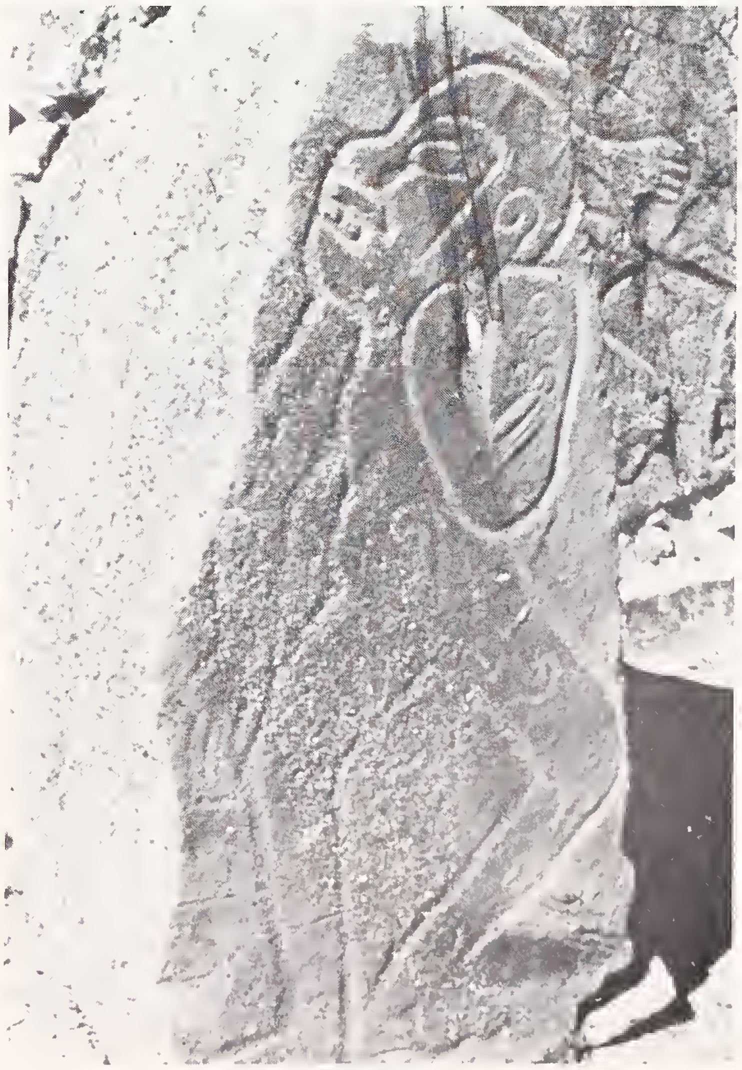

Figure 14
Photograph of a bas-relief from the city of Monte-Alban in Oaxaca. The man suffers a hemiplegia, the arm being in flexed posture with external rotation of the ipsilateral leg. (Courtesy Enrique Labadie Priani.)

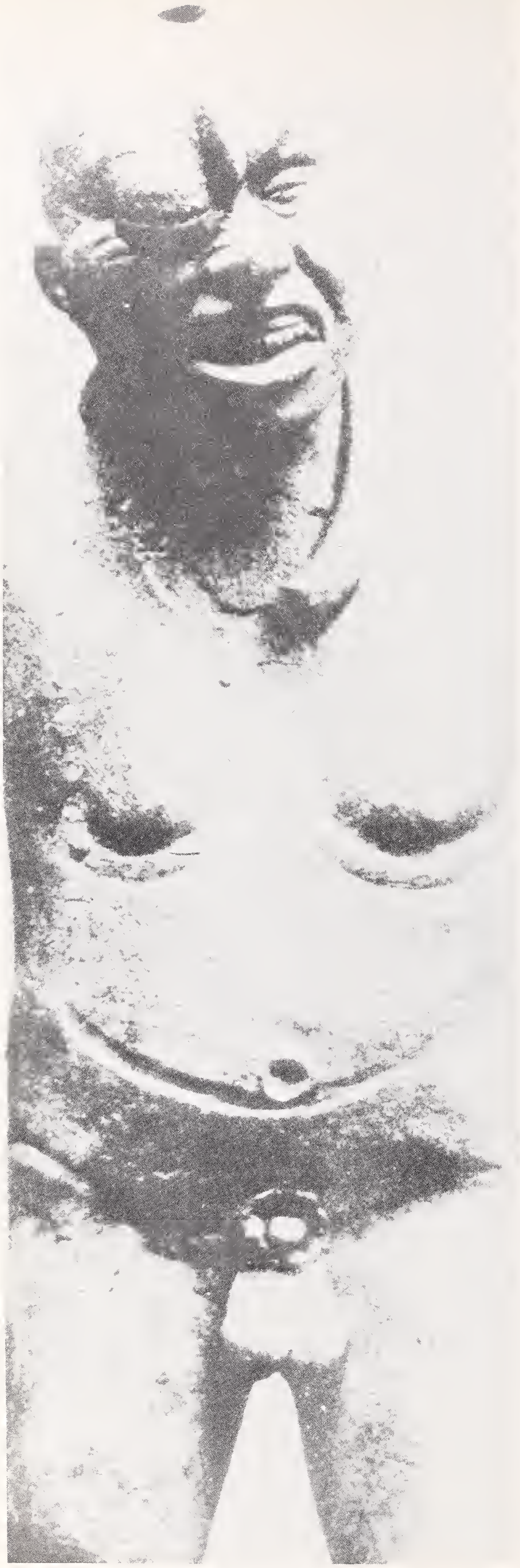

Figure 15
Statue of a naked man with a right-sided retrorbital tumor.[32] The extraordinary detail in this sculpture is the fact that it depicts a therapeutic attempt by means of a midline Burr-hole. (Mexico City.)

ACKNOWLEDGEMENTS

I wish to thank Architect Pedro Ramirez Vazquez of Mexico City for permitting us to utilize photographic material from his excellent book (Ref. 2), Mr. Fred Heindreich, Search Analyst, Medical Library at the University of Arizona, for his invaluable assistance and Albert Ehle, M.D. for reviewing this manuscript.

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SYMPOSIUM ON BREAST CARCINOMA

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INTRODUCTION

In the past two decades significant advances in the studies of neoplasms and the treatment of patients afflicted with cancer have resulted in the requirement for a new sub-specialty in internal medicine, that of medical oncology. The American Board of Internal Medicine responded to this need by the creation of a Subspecialty Board and certifying examination in this discipline. In keeping with this philosophy, it was decided to devote a portion of the 1974 Arizona Regional Meeting of the American College of Physicians to this area of knowledge.

Bronchogenic carcinoma is the leading neoplastic cause of death in males and breast cancer is the leading female neoplastic cause of death in the United States.

With regard to breast carcinoma, the rate of mortality has not changed significantly from the period 1930 to the present time. Because of the magnitude of the breast carcinoma problem and its many medical aspects, it was selected for review at this time. Although factors are recognized that are associated with an increased incidence of breast carcinoma, such as familial association, infertility and lack of breast feeding, the etiology of breast carcinoma remains unknown.

The diagnosis and management of breast carcinoma, of necessity, begins with the primary care physician. For review, the more common causes of breast masses in women under age 35 are, in order, mammary dysplasia or fibrocystic disease, fibroadenoma, mastitis, fat necrosis and carcinoma. In this age range breast carcinoma is the least likely cause of a breast mass.

Between the age of 35 and 50 fibrocystic disease is still the most common etiology of a breast mass but carcinoma is now the second most common cause, followed by fibroadenoma, traumatic fat necrosis, mastitis and papilloma. In the age group over 50, or the post-menopausal period, breast carcinoma is the leading etiology of a breast mass, followed by fat necrosis, Paget's disease of the breast, mastitis and papilloma.[1]

On physical examination 41% of these cases of breast cancer occur in the upper outer quadrant of the breast and approximately 26%, or one-quarter, of cancers are subareolar or involve more than one quadrant of the breast. Fourteen per cent of breast masses are upper medial quadrant with 11% in the lower quadrant. The remaining 8% are those involving the areola itself.[2]

MEDICAL MANAGEMENT OF ADVANCED METASTATIC BREAST CARCINOMA

The medical management of advanced metastatic breast carcinoma involves hormonal therapy and chemotherapy, and follows the phases of surgical mastectomy and radiotherapy. Whenever possible, hormonal therapies form the mainstay of treatment and are not abandoned until the hormonal responsiveness of the tumor has been lost. Measurement of objective responses of tumor masses is the way effectiveness of tumor therapy is evaluated. For practical purposes, a decrease in the size of a mass of at least 50% is a positive response, with a complete shrinkage seen on occasion. Poor responses are those in which less than 50% shrinkage are recorded. Breast lesions, cutaneous involvement and pulmonary metastases are easily measured directly. Osseous lesions can be scored if an osteolytic lesion becomes osteoblastic or osteoblastic lesions become more normal in appearance. Hepatic involvement can be evaluated by size of liver, alkaline phospatase, liver scan and bilirubin. The disease is progressive if there is an increase in the size of lesions despite shrinkage in others.

Hormonal therapeutic responses in breast cancer are dependent on several features. Chronological and menopausal age of the patient are determinants of this type of therapy and the probability of response. Soft tissue lesions of the breast itself, skin and lymph node metastases are recognized as more responsive to estrogen therapy in the post-menopausal female than are liver metastases or pulmonary lymphangitic metastases. Central nervous system metastases are virtually nonresponsive to hormonal measures. The duration of the interval from mastectomy to recurrence as well as duration of metastatic disease itself correlates with response. Long intervals for

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From: 1313 North Second Street, Phoenix, Arizona 85004 (Dr. Weinrach).

recurrences and slow dissemination of the disease tend to favor better response to therapy.[3]

There have been laboratory studies attempting to relate biological capabilities of the tumor and response to therapy. These studies have included excretion of urinary androgens, estrogens and corticosteroids and studies of estrogen binding by the tumor itself. To date, these studies have contributed to the knowledge of the factors underlying hormonal dependence but for the most part have not become practical clinical tools to predict responsiveness to hormonal therapy or ablation.[4, 5]

Hormonal management of advanced breast carcinoma is divided into two main categories — the management of the premenopausal and that of the post-menopausal patient. As in all hormonal therapies, at least ten weeks are required to evaluate a response and when clinical judgment dictates a more rapid response is needed, chemotherapy can be used to initiate therapy or in combination with hormonal measures. Let us examine first the management of the premenopausal patient with advanced disease. Estrogenic hormones produced by the ovaries are factors in maintaining the growth of breast carcinoma in approximately one-third of premenopausal patients. Bilateral oophorectomy in women with regular menses results in objective improvement in disseminated disease in 40% of cases.[6] Duration of this improvement averages approximately nine months. This procedure is of value in advanced primary, recurrent or distant metastatic disease. Patients who respond to this procedure live longer than non-responders. This castration should be carried out at the time of recurrence rather than at the time of the original mastectomy, so-called prophylactic castration. Although survival time has not shown significant differences between prophylactic castration and therapeutic castration groups, the interval between the first recurrence, usually a soft tissue recurrence, is longer in the prophylactic group. The interval between tumor therapy and death was longer in the therapeutically castrated group and, therefore, the prophylactic procedure does not prevent recurrence of cancer.[7] The prophylactic most importantly does not provide information on the hormonal responsiveness of breast cancer and, therefore, cannot be used to plan further hormonal ablations, such as adrenalectomy or hypophysectomy or even further hormonal therapy such as high doses of adrenal steroids When medically contraindicated or refused, patients can have castration by radiotherapy, although response may take weeks and it is of no value in rapidly progressive disease. With castration, artificial menopause is produced which can be very symptomatic. These symptoms cannot be treated, of course, with estrogens or androgens. Liberal use of tranquilizing drugs is indicated. When patients relapse following a response to castration, further endocrine ablation can be considered, such as a bilateral surgical adrenalectomy, to remove this source of estrogenic hormones. The response rate is approximately 40%. The morbidity and mortality is 4% and similar to that of hypophysectomy.[8] Of those cases failing to respond to castration, only 17% in the literature have obtained any objective benefit by adrenalectomy.[9] Adrenalectomy is contraindicated with extensive hepatic metastases or with central nervous system involvement. Adrenalectomy, of course, requires replacement by cortisone acetate or other adrenal steroids and 9-alpha fluorohydrocortisone.

Hypophysectomy results in approximately the same 40% response rate as adrenalectomy and the choice between these surgical procedures rests frequently with surgical facile available for the two procedures. Following castration by oophorectomy, the pituitary and adrenals increase in size, and the effect of hypophysectomy may be due to suppression of estrogen activity and other hormones by the adrenal, by removal of adrenocorticotrophic and gonadotrophic hormones. Other possible hormones of importance produced by the pituitary may be prolactin and growth hormone.[10] The hypophysectomy can be done by various techniques. There is transfrontal craniotomy as well as transphenoidal hypophysectomy. Radiotherapy can also be delivered to the pituitary but again effect can be slow in progression. Replacement therapy involves both thyroid hormone and cortisone acetate.

Androgens probably should not be employed initially in the premenopausal patient who is hormonally responsive, as testosterone may be metabolically converted to estrogen. However, there are premenopausal patients who are not hormonally responsive and in whom testosterone could be used for general anabolic effects and to promote erythropoiesis in anemic patients. In certain patients also adrenal steroids in large amounts can be of benefit.[11]

The mainstay of endocrine therapy of postmenopausal patients has been estrogenic and androgenic hormones. The median incidence of regression for estrogenic hormones was 36% and 21%. For testosterone analogs progestational agents have also been employed. Most studies would indicate a 2:1 response rate of estrogen to androgen and estrogens are, therefore, the agents of choice. Table 1 illustrates various series giving the range of responses of estrogens and androgens in the postmenopausal female.[3] The most commonly employed estrogenic hormone is diethylstilbesterol, a synthetic hormone, and the dose may be 5 mg by mouth t.i.d. Side effects in addition to nausea and vomiting, include salt and water retention, hypertension, polyuria due to edema of the female urethra, hypercalcemia and mental changes. In post-menopausal patients androgens find their greatest utility in those case demonstrating predominantly skeletal disease. Androgens can be employed after a response to estrogens is lost. Hypophysectomy in hormonally responsive postmenopausal patients has given a 40-60% response rate.[12] In the immediate post-menopausal years, such as one year after cessation of menses, estrogen activity can be documented by vaginal smear and these patients can be managed as premenopausal if estrogen activity is present. In the period of one to four years since the last menstrual period, estrogen dependence and response to hormonal therapy is not good and initial therapy should be non-hormonal, or chemotherapy, particularly if the disease is rapidly progressive.

TABLE I
Objective Regression Rates of Disseminated Breast Cancer According to Site of Metastases and the Hormonal Agent

Soft Tissue Metastases (Breast, Skin, Nodes)	**Androgen**	**Estrogen**
Therapeutics Trial Committee	18.2	40.7
Nathanson	22.7	44.6
Cooperative Breast Group	25.0	34.1
Kennedy	16.7	37.5
Osseous Metastases		
Therapeutics Trial Committee	30.4	31.3
Nathanson	22.6	23.4
Cooperative Breast Group	8.1	12.8
Kennedy	13.3	25.0

Adenocarcinoma of the breast is one of the most responsive solid tumors to chemotherapy. Chemotherapy ordinarily is employed when hormonal control is no longer possible or when disease is rapidly progressive. A number of drugs can effect shrinkage of tumor by greater than 50%. The palliation that results from these responses results in prolonged survival. Chemotherapy at the present can be divided into two main categories — single agent chemotherapy and multiple drug regimens. In general, single agents are used sequentially for slowly advancing tumors and the multiple drug regimens are used for more rapidly advancing or fulminant disease or for tumors resistant to one or more of the single agents. Table II illustrates the more conventional single agents of use in breast carcinoma and their approximate average response rate based on many series and different dose schedules.[13] Cyclophosphamide, with an average response rate of 34%, is, of course, an alkylating agent. It can be used orally or intravenously and in addition to myelosuppression and alopecia, may cause hemorrhagic cystitis as well as nausea, vomiting and diarrhea. Of the antimetabolites, 5-fluorouracil has had wide use and extensive statistics compiled. A wide range of therapeutic effectiveness has been observed in many series but 26% response rate is probably close to its true efficacy.

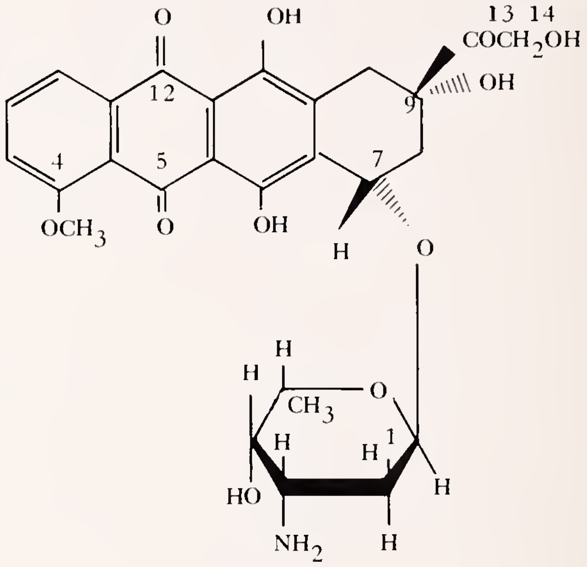
TABLE II
Useful Single Agents for Breast Chemotherapy

Alkylating Agents	**Average % Response**
Cyclophosphamide	34%
Antimetabolites	
5-Fluorouracil	26%
Methotrexate	34%
Mitotic Inhibitors	
Vincristine	20%
Vinblastine	20%
Antibiotics	
Adriamycin	35%

This drug, a pyrimidine antagonist, can be given orally or intravenously and is probably the drug of choice to initiate therapy with hepatic metastases. Methotrexate has also been used extensively in breast carcinoma and has an accepted average response rate of 34%. It is a folic acid antagonist. Most series reporting high efficacy have employed Methotrexate parenterally. Myelosuppression, stomatitis, nausea, diarrhea and hepatic toxicity are known side effects. It must be used with caution in renal insufficiency as the drug is excreted via the kidneys.

Vincristine and vinblastine are mitotic spindle inhibitors and each has a 20% response rate. Vincristine has been studied more extensively than Vinblastine in breast carcinoma and side effects include neuropathy, ileus and myelosupression, although the myelosuppression is more common with Velban. These drugs must be administered intravenously.

Adriamycin, an antibiotic, has recently been released by the Food and Drug Department for general use and has what appears to be a 35% response rate. It is most useful at this time when breast carcinoma has become resistant to single drugs and combination regimens. This agent has demonstrated wide activity in other solid tumors such as lymphomas, soft issue sarcomas, pediatric tumors, multiple myeloma and bronchogenic carcinoma. Figure 1 illustrates the structure of Adriamycin. It is an anthracycline glycoside antibiotic. The mechanism of action involves drug binding to DNA and inhibition of RNA synthesis. It is metabolized mainly by the liver. It can be given by rapid intravenous injection and has side effects of myelosuppression, nausea and vomiting and a significant cardiac toxicity when the dose reaches certain critical levels. There are other single agents with some activity, such as nitrosoureas but the responses and number of series studies are small in relation to the commonly used drugs already mentioned. With respect to multiple drug regimens, the combination of 5-fluorouracil, Methotrexate, Cyclophosphamide, vincristine and prednisone has received extensive study. In 1969, Cooper reported 90% response rates in 60 patients with these five drugs.[14] Since that time, many investigators have modified the original regimen for acceptable levels of toxicity and an average response rate of 50% is probably accurate for the modified regimens.[13] Most rewarding is the observation that long remissions can be obtained when resistance to one or more single agents is observed. Recently, Jones at the University of Arizona Medical School reported 80% response rates with a combination of Adriamycin and Cyclophosphamide. Each of the two drugs was used in dosage to decrease toxicity. High rates of remission were noted for soft tissue, lymph node, bone, liver, lung and liver involvement. This is encouraging and hopefully large series of cases will lend support to this excitingly high response rate. The Adriamycin-Cyclophosphamide regimen has been extended to adjunctive studies, which are those in which chemotherapy is used following mastectomy in cases which reveal axillary node involvement.[15] The entire subject of adjunctive chemotherapy is being re-evaluated. Many early studies employed alkylating agents and 5-fluorouracil for short periods immediately after mastectomy and axillary node dissection. Except for a few studies which suggested possible effect to prevent recurrence, these earlier studies did not show much benefit on the rate of recurrence. However, because of the few series that did show possibly some benefit, the entire subject is now under intense clinical evaluation in which drugs are given in intermittent schedules over long periods of time, particularly up to 1-3 years, in contrast to many of the earlier studies which ended at four weeks after mastectomy.



ADRIAMYCIN

Figure 1
Symposium on Breast Cancer

In conclusion, the treatment of advanced breast carcinoma by both hormonal and chemotherapeutic methods can both prolong survival and increase its quality.

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PATHOLOGY OF CANCER OF THE BREAST

PETER MAO, M.D.

Cancer of the breast is a most dreaded human affliction. Its prognosis, however, is not universally bad. Among the major factors which may influence the prognosis is the histologic type of the cancer. Furthermore, a general agreement of the criteria for histologic classification and nomenclature must be obtained if meaningful comparative study of breast cancer is to be done.

At present, the most widely accepted classification of breast tumors is the one suggested by Foote and Stewart[13] in 1946, slightly modified by McDivitt, Stewart and Berg[26] in 1968. A classification not significantly different was adopted by the World Health Organization in 1968. The Foote and Stewart Classification is simple, reproducible, and has meaningful prognostic implications. It is based on a combination of features: gross (scirrhous, colloid, etc.), histologic (adenocarcinoma, sarcoma, etc.), histogenetic (ductal, lobular or stromal) and activity (infiltrating and noninfiltrating).

I. Carcinoma
  A. Noninfiltrating:
    1. Intraductal (papillary, comedo, mucous, cribriform, etc.)
    2. Intracystic
    3. Intralobular (lobular carcinoma in situ).
  B. Infiltrating:
    1. Papillary carcinoma.
    2. Comedocarcinoma.
    3. Infiltrating duct carcinoma with productive fibrosis (scirrhous carcinoma).
    4. Colloid carcinoma.
    5. Signet ring cell carcinoma.
    6. Medullary carcinoma.
    7. Lobular carcinoma.
  C. Special histologic variants:
    1. Tubular carcinoma.
    2. Adenocystic carcinoma.
    3. Sweat gland or apocrine carcinoma.
    4. Metaplastic carcinoma.
    5. Paget's disease of breast.
    6. Inflammatory carcinoma.

II. Sarcoma:
  A. Cystosarcoma phyllodes.
  B. Stromal sarcoma.
  C. Liposarcoma.
  D. Angiosarcoma.
  E. Lymphoma.

PAPILLARY CARCINOMA: This is a relatively rare carcinoma (2-5%) of the breast. The noninfiltrating form does not impart secondary physical signs of cancer and is usually not even suspected until at the time of frozen section or permanent section microscopy. The tumor is limited to the duct system and may have extensive spread along the ductal channels. It is often associated with nipple discharge. Microscopically it is characterized by atypical papillary overgrowth of duct epithelium arranged in finger-like projections lined with single or multilayered cells (Fig. 1). More often than not, these projections do not have a well vascularized stalk. The most important feature of malignancy is a disturbance of cell polarity. The epithelial cells of papillary carcinoma usually do not exhibit impressive anaplasia or pleomorphism and mitotic rate is low. At times, distinction from duct papilloma may be difficult. In their well illustrated paper, Kraus and Neubecker[21] have discussed the distinguishing characteristic features of papilloma and papillary carcinoma of breast. The infiltrating papillary carcinoma is microscopically similar to the noninfiltrating form, except of course, for the tissue infiltration. Even in bulky tumors, the papillary structures are usually still readily visible.

COMEDOCARCINOMA. This carcinoma arises in small or intermediate ducts. It is so named because, like comedones, cores or plugs of pasty material can be expressed from the surface of the tumor. The ducts are dilated and filled with intraductal tumor cells of medium size. The cells are definitely atypical and anaplastic, multilayered with loss of polarity. In some, they may resemble apocrine cells. The center of the ducts contains a core of detritus.

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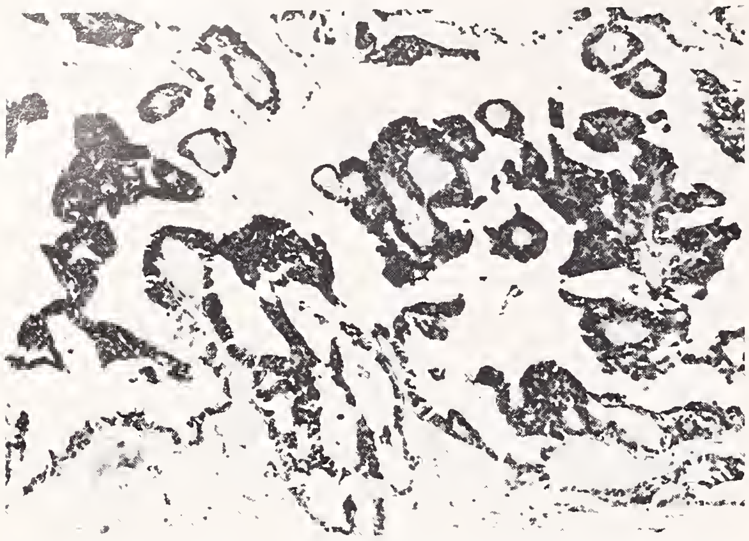

Figure 1
Papillary Carcinoma. Note the irregular branching papillary overgrowth of the tumor. In many of the papillae, stromal support is lacking.

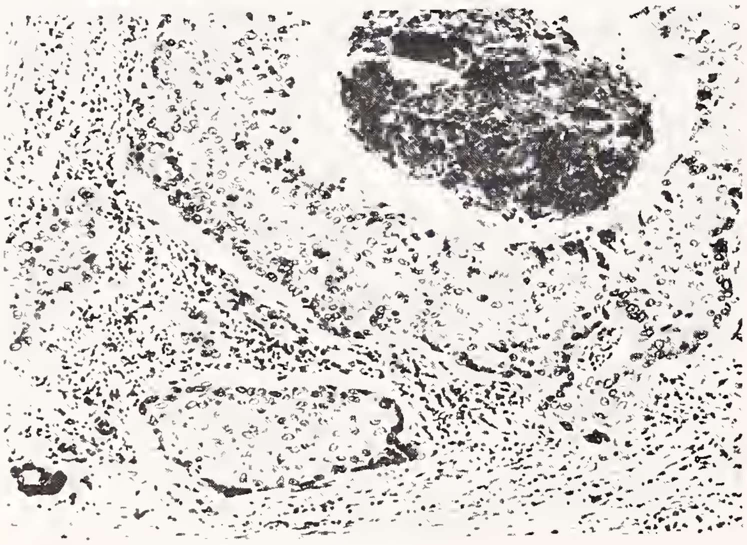

Figure 2
Infiltrating Comedocarcinoma. A "comedone" with central detritus can be seen in the upper field. A few infiltrating strands of tumor cells are seen in the lower field.

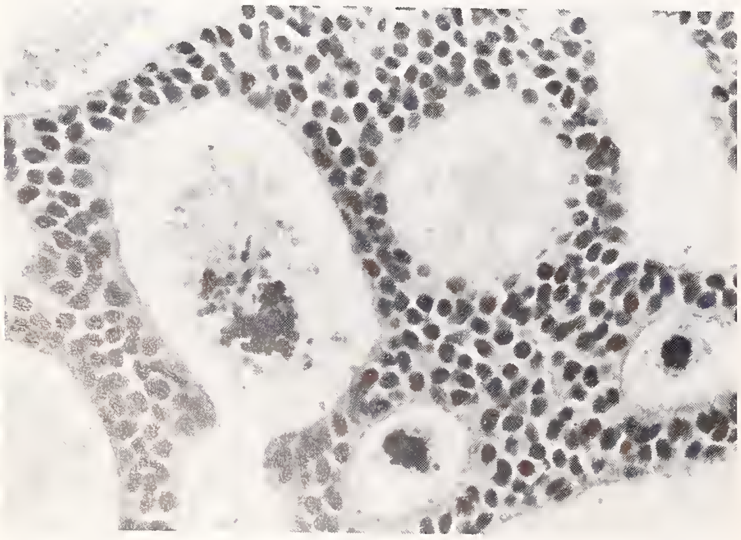

Figure 3
Intraductal Carcinoma. Solid cords and trabeculae of tumor cells are interrupted by circular spaces, forming a cribriform pattern.

The neoplasm may be confined within the ducts (noninfiltrating), or show only minimal or microscopic infiltration even when reaching large size (Fig. 2). When frankly and extensively infiltrative, the tumor is not distinguishable microscopically from the infiltrating ductal carcinoma with productive fibrosis (scirrhous carcinoma) and is classified in the latter group. It should be mentioned, however, that a comedo formation can be occasionally recognized even within the metastasis and does not necessarily indicate an intraductal growth.

INTRADUCTAL CARCINOMA. In addition to the papillary and comedo pattern, an intraductal carcinoma often exhibits a cribriform or cartwheel architecture. The solid intraductal tumor growth is interrupted by circular duct-like

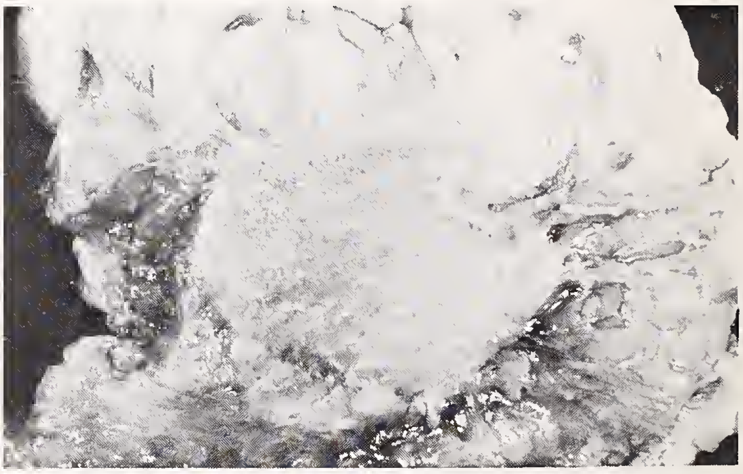

Figure 4
Infiltrating Duct Carcinoma with Productive Fibrosis. Margin of the tumor is irregular. There are many yellowish dots and streaks representing elastosis of ductal and occasional venous walls.

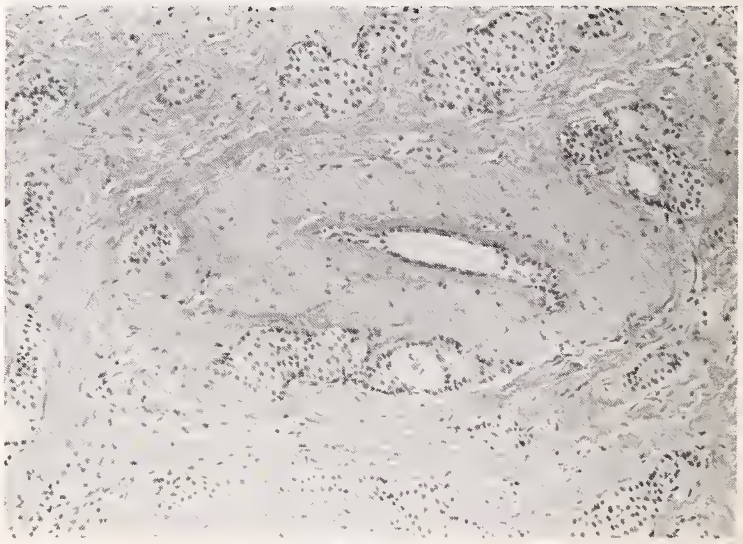

Figure 5
Infiltrating Duct Carcinoma. In the center is a duct with elastotic wall.

spaces of varying sizes in sieve fashion (Fig. 3). Sometimes, the intraductal tumor growth is scanty, with the cribriform network and cellular papillae applied closely to the duct wall, leaving large acellular spaces within the duct. The intraductal carcinoma may have extensive spread within the duct system. Microscopic infiltration should be excluded only after thorough and exhaustive study of the tissue specimen.

INTRACYSTIC CARCINOMA. The intracystic carcinoma is probably a variant of intraductal carcinoma, notably the papillary type. This is a rather rare carcinoma. Gatchell and Associates[15] found only 48 examples of intracystic carcinoma among 9,000 breast carcinomas treated at the Mayo Clinic over a 35-year span. Despite all gradations of cytologic malignancy the 5-year survival totaled 80 percent. Recently at our institution, we have seen a papillary intracystic carcinoma in which infiltrative cancer was present in the cyst wall at the root of the intracystic growth.

INFILTRATING DUCT CARCINOMA WITH PRODUCTIVE FIBROSIS (SCIRRHOUS CARCINOMA). This is the most common form, constituting around 80% of the infiltrating mammary carcinomas. Because of the dense fibrotic stroma, the tumor is decidedly hard, with irregular borders. The cut surface often shows yellowish streaks (Fig. 4) which represent increased elastic tissue[3] in the wall of degenerated ducts (Fig. 5) and some veins. The tumor cells vary in size and shape, usually of small to medium size, and may form ductal spaces. Frequently, however, the tumor cells are arranged in irregular small clusters or files (Fig. 6). When desmoplasia is extreme, the tumor cells may be difficult to find or recognize.

The prognosis of infiltrating duct carcinoma with productive fibrosis is relatively poor, comparable to that of the infiltrating lobular carcinoma. These two histologic types appear to have the worst outlook of mammary carcinomas.[1, 6]

COLLOID OR MUCINOUS CARCINOMA. This is a relatively rare carcinoma arising from the ducts. Mucin production is manifest in its early possibly intraductal stage (Fig. 7). Grossly it is well circumscribed and exhibits a soft gelatinous appearance (Fig. 8), thus may simulate a fibroadenoma with myxoid stroma. Cytologically the tumor cells are rather orderly and are arranged in clusters or papillae suspended in pools of mucin (Fig. 9). In more anaplastic forms,

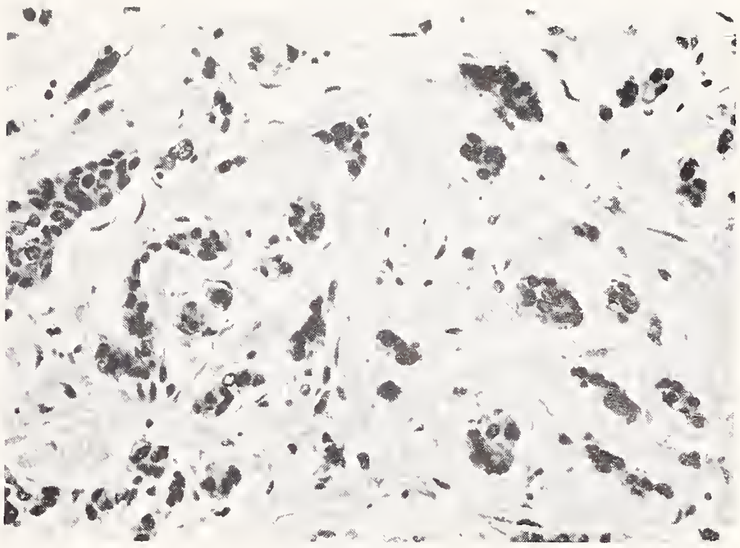

Figure 6
Infiltrating Duct Carcinoma. Note the irregular clusters of tumor cells infiltrating in a desmoplastic stroma.

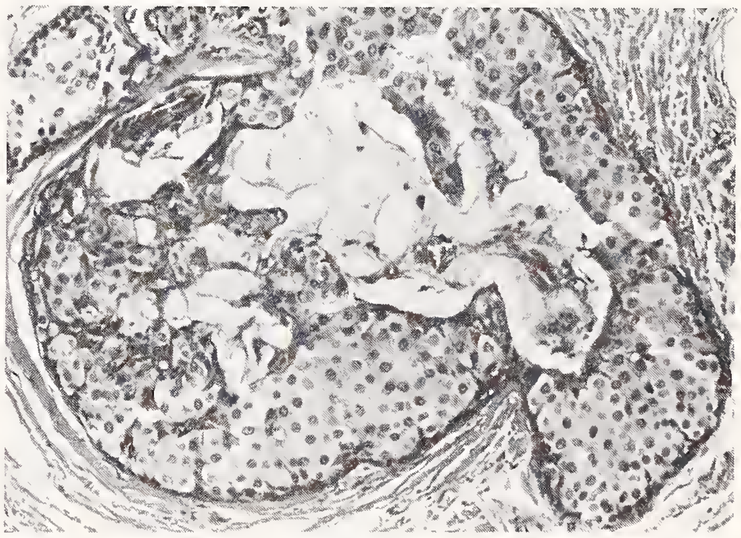

Figure 7
Colloid Carcinoma. This photomicrograph is from the margin of a colloid carcinoma. This intraductal lesion already exhibits profuse mucin production.

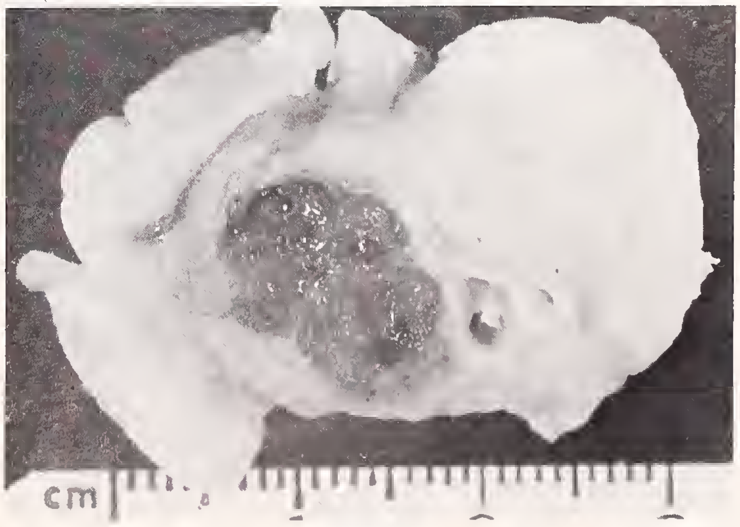

Figure 8
Colloid Carcinoma. Well circumscribed lobulated tumor having a gelatinous quality.

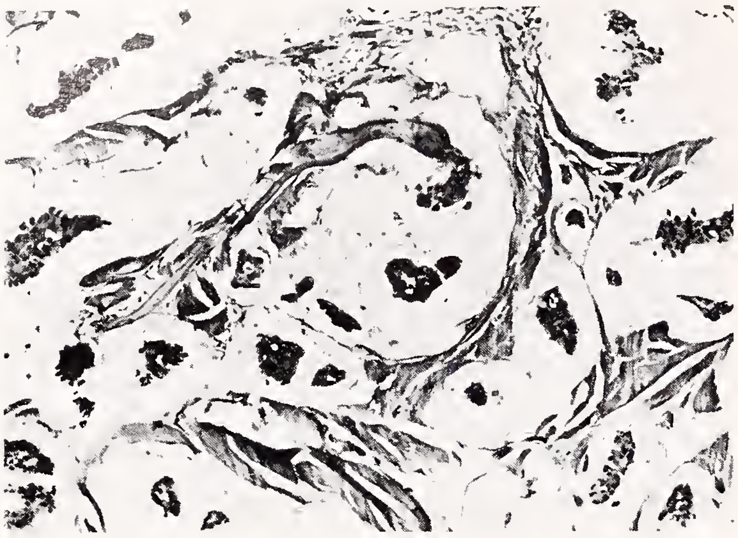

Figure 9
Colloid Carcinoma. Small clusters of tumor cells are suspended within pools of mucin.

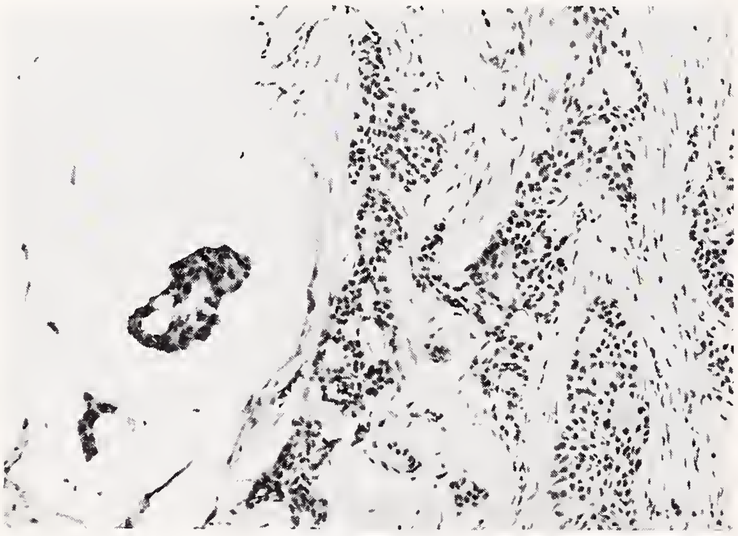

Figure 10
This infiltrating duct carcinoma shows partial colloid carcinoma.

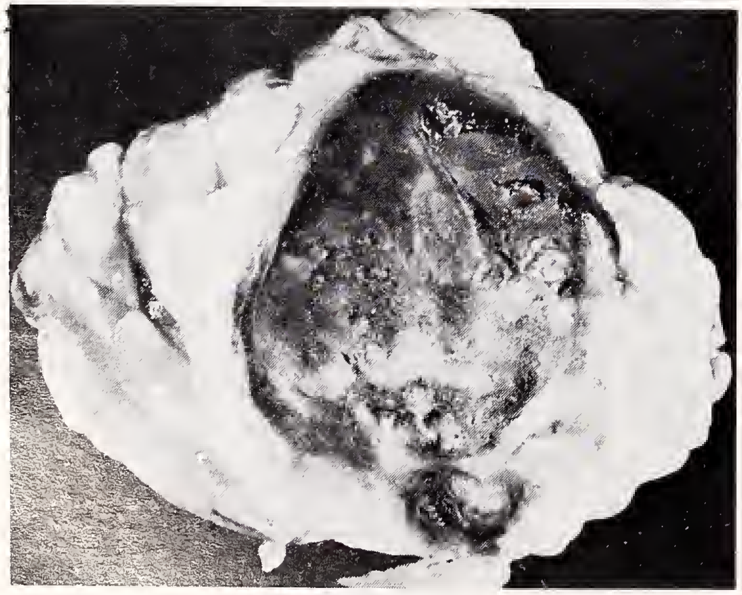

Figure 11
Medullary Carcinoma. The tumor is well circumscribed, giving the impression of being encapsulated. There is extensive hemorrhage and necrosis within the neoplasm.

the tumor cells tend to form glands or signet ring forms and grow in a more diffuse fashion, without production of any significant amount of extracellular mucin. Occasionally, a colloid carcinoma may be associated with an infiltrating duct carcinoma (Fig. 10). This form, as well as the signet ring cell carcinoma, do not have the good prognosis of pure colloid carcinoma, and should be separated from the latter group.[28, 30, 33] It has been suggested that the terms, infiltrating duct carcinoma, partly colloid and signet ring cell carcinoma, be adopted respectively for such tumors.

MEDULLARY CARCINOMA. This is usually a well circumscribed soft grayish opaque tumor having an encephaloid appearance. Hemorrhage and necrosis are frequent, thus giving a clinical impression of rapid growth (Fig. 11). Histologically it is extremely cellular, made up of irregular sheets and trabeculae of large oval or polyhedral cells with vesicular nuclei and prominent nucleoli, not unlike cells of an embryonal carcinoma. Mitotic figures are often numerous. An important integral feature is the marked lymphoid cell infiltration within the tumor (Fig. 12). This lymphoid cell infiltration has been thought to represent a favorable host response to the cancer. The prognosis of this carcinoma indeed is significantly better than the usual infiltrating duct carcinomas.[1, 6, 7]

LOBULAR CARCINOMA. Lobular carcinoma is thought to arise from the duct apparatus of the mammary lobule, the intralobular duct and its terminal ramifications. The lobular carcinoma in situ (LCIS) has no gross distinguishing features and is usually found incidentally in breasts removed for other reasons. Microscopically, the mammary lobules are enlarged and filled with closely packed relatively uniform epithelial cells showing no particular nuclear atypism (Fig. 13). The lumens of the terminal ducts are invariably obliterated.

Infiltrating lobular carcinoma (ILC) has a rather characteristic histological appearance. It may or may not be accompanied by an in situ component. The absence of an in situ component, of course, may be due to inadequate sampling. The ILC displays an almost monotonous single file arrangement in which cords of tumor cells one cell wide are separated by fibrous tissue (Fig. 14). The rows of tumor cells may assume a concentric arrangement around intralobular ducts (Fig. 15). Furthermore, there are often aggregates of tumor cells in fat with little fibrous stroma (Fig. 16).

Although grossly the ILC may resemble a scirrhous carcinoma, often it may be quite misleading. It may not present any distinctly visible lesion and yet impart a peculiar and slight induration whose precise limits are vague.

The importance of recognizing lobular carcinoma is the high incidence of multicentricity and bilaterality. A total of 18 cases have been reported in which breasts containing lobular carcinoma in situ treated only by biopsy have subsequently developed infiltrating lobular carcinoma.[17, 19] There is an incidence of 25-35% of LCIS in the contralateral breast in patients with LCIS. In two series of reports totaling 46 and 47 patients with LCIS,[17, 19] four in each group (8.7% and 8.5%) developed ILC in the contralateral breasts 4 to 27 years following the diagnosis of LCIS. These figures would be expected to increase as more years pass with the breasts still in place. Indeed, Adair et al stated that the actuarial 30-year risk of a second primary carcinoma in the contralateral breast is 25.7% for patients with infiltrating lobular carcinoma.[1] Wheeler et al,[37] however, have shown considerably lesser risk of developing ipsilateral or contralateral infiltrating breast carcinoma in patients with LCIS.

At times, metastatic lobular carcinoma in lymph nodes and cytologic smears from pleural effusions with metastasis to the pleura may simulate malignant lymphoma both histologically and cytologically.

SPECIAL HISTOLOGIC VARIANTS

TUBULAR CARCINOMA. Tubular carcinoma, also known as orderly carcinoma and well differentiated carcinoma, is a rather rare carcinoma and has a much better prognosis than does infiltrating duct carcinoma. In a series of 35 cases, Carstens et al[8] reported no deaths resulted directly from the disease. Only three had axillary lymph node metastases. Ten of 33 cases reported by Taylor and Norris[36] had axillary metastases, almost always involving one or two lymph nodes in the lower axillary region. Only one patient in this series died of metastatic carcinoma, 17 years after radical mastectomy.

Microscopically, tubular carcinoma is composed of well formed tubules separated by a loose abundant desmoplastic stroma in which amyloid can be identified in a majority of cases. The tubular structures are orderly, with little variation in size, and are typically open, even

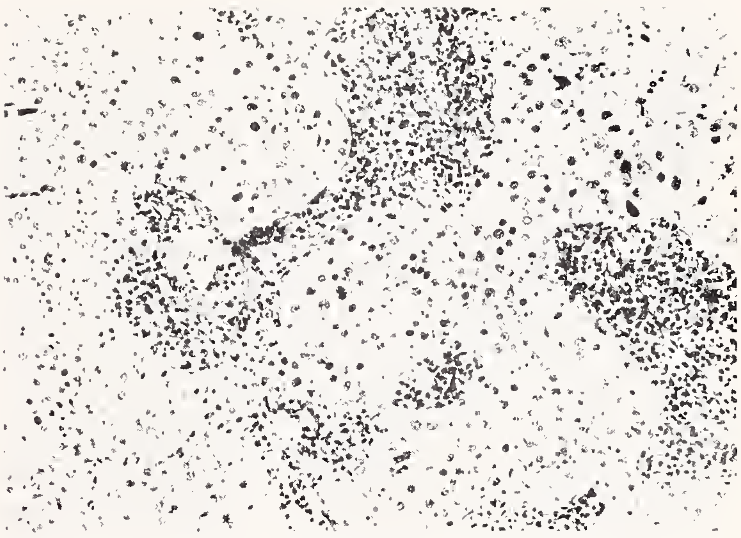

Figure 12
Medullary Carcinoma. The tumor is made up of sheets of larg anaplastic cells. There is an abundant lymphoid stroma.

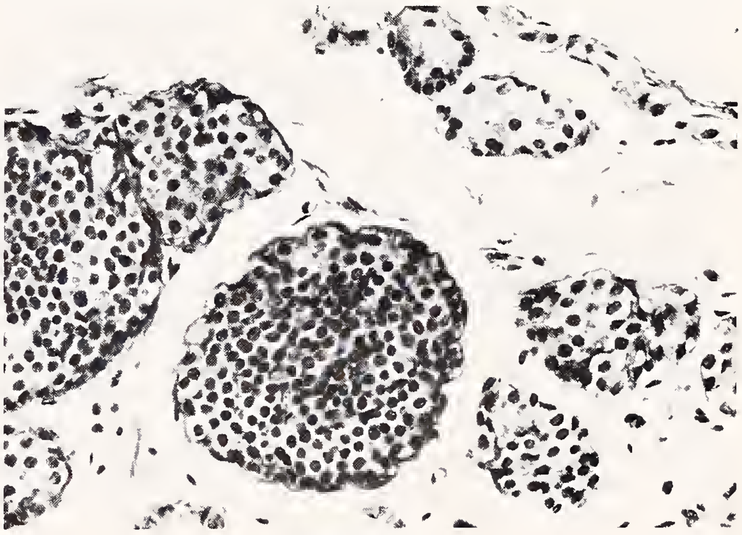

Figure 13
Lobular Carcinoma In Situ. The terminal ducts of the mammary lobule are filled and distended with relatively uniform epithelial cells showing no particular nuclear atypia.

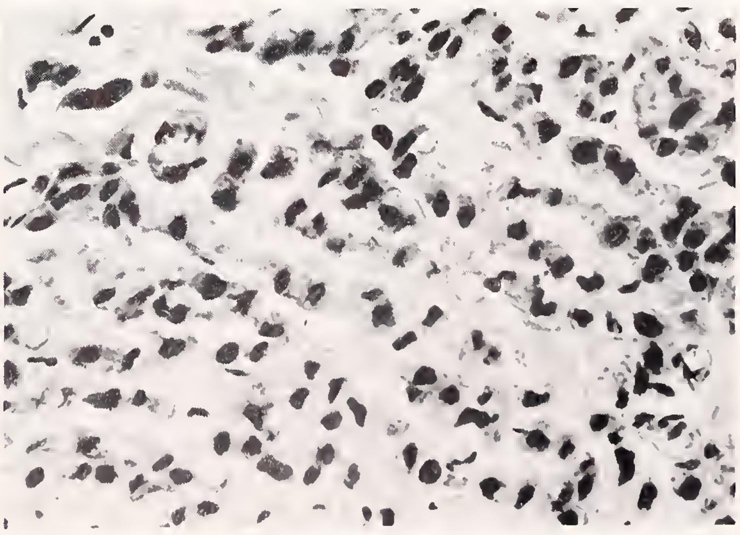

Figure 14
Infiltrating Lobular Carcinoma. Single monotonous files of small tumor cells are separated by a small amount of fibrous stroma.

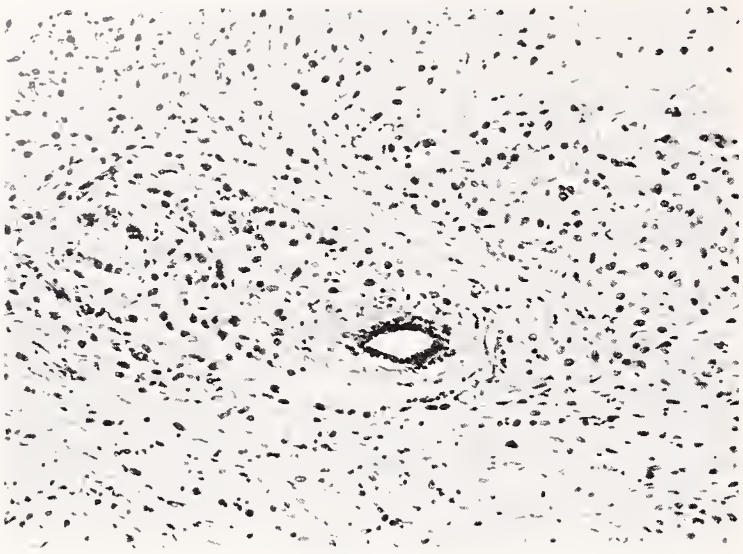

Figure 15
Infiltrating Lobular Carcinoma. Anaplastic small malignant cells in single files are disposed concentrically around an intralobular duct.

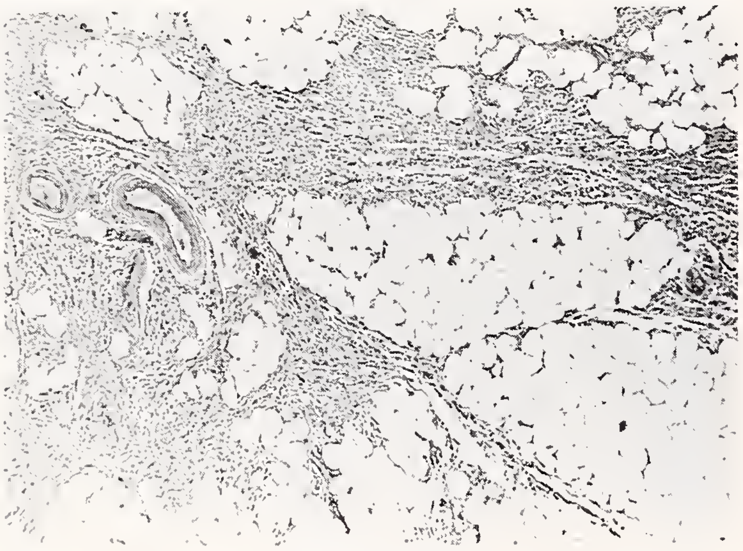

Figure 16
Infiltrating Lobular Carcinoma. Closely set single files of small tumor cells are infiltrating the mammary fat without much fibrous stromal response.

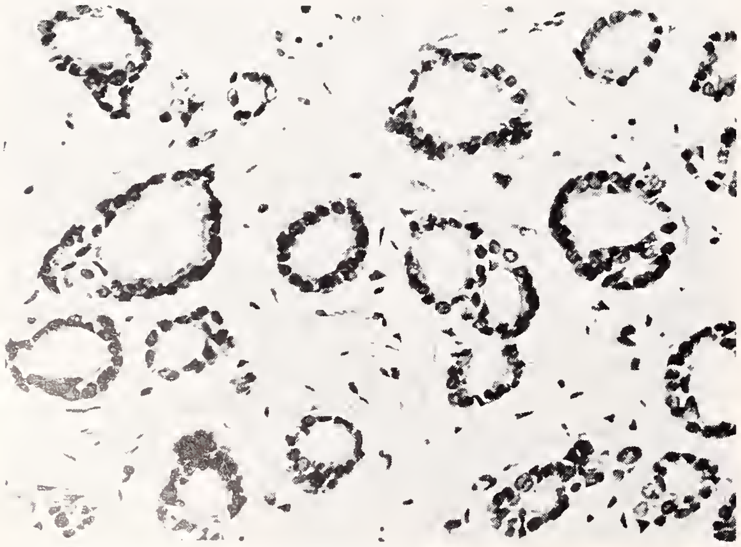

Figure 17
Tubular Carcinoma. Well formed orderly open tubular structures are lined by a single layer of neoplastic epithelial cells.

dilated, and are lined by a single layer of cuboidal or columnar cells with frequent apocrine like sprouts projecting into the lumens (Fig. 17). Mitotic figures are decidedly infrequent. In many cases, the tubular carcinomas may be associated with intraductal papillary carcinoma, and less frequently with other types of carcinoma.

ADENOID CYSTITIC CARCINOMA. This is a rare type of carcinonma histologically and ultrastructurally indistinguishable from the type seen in salivary glands and lower respiratory tract.[20] It has an excellent prognosis. Axillary and visceral metastases practically never occur. In a series of 21 cases of adenoid cystic carcinoma of the breast, Cavanzo and Taylor failed to encounter a single case with axillary or distant metastasis.[9] Nayer, however, did report a single case who presumably had pulmonary metastasis 8 years after a radical mastectomy for adenoid cystic carcinoma of the breast.[8] The diagnosis of metastatic adenoid cystic carcinoma in this case, however, was not confirmed by histologic examination, but only by cytologic study of pleural fluid which showed clusters of cells in a pattern suggestive of adenoid cystic carcinoma.

Microscopically, the tumor is made up of cussters of small cells with scanty cytoplasm and regular round nuclei. These clusters are arranged to form cylindromatous multicystic spaces containing eosinophilic or slightly basophilic material that is mucicarminophilic (Fig. 18). Perineural infiltration is often prominent. Occasionally, the adenoid cystic pattern may be found admixed with other histologic types of breast carcinoma. In these lesions, the prognosis is that of the other histologic type. The adenoid cystic carcinoma superficially resembles the intraductal carcinoma with cribriform pattern (Fig. 3), but should be distinguished from the latter. Simple mastectomy appears to be the preferred treatment for the adenoid cystic carcinoma of the breast.[9]

SWEAT GLAND OR APOCRINE CARCINOMA. Apocrine-like cells are not infrequently seen in the usual type of duct carcinomas. This is not surprising since mammary gland is in reality a modified apocrine sweat gland. The tumor classified as a sweat gland or apocrine type is a tubuloalveolar carcinoma made up of acidophilic opaque cells resembling oncocytes. This type is rare and does not appear to differ in behavior from the usual type of infiltrating ductal carcinoma.

METAPLASTIC CARCINOMA. Metaplastic carcinoma of breast is a group of duct carcinomas in which a part of the carcinoma has undergone changes to a different histologic component. Duct carcinoma showing giant cell and squamous metaplasia appears to be most common. Occasionally metaplasia is in the direction of undifferentiated mesenchymal-like histologic pattern (Fig. 19) and is designated by some as carcinosarcomas. Rarely, metaplasia to cartilage (Fig. 20) and bone has been observed. Although terms such as carcinosarcoma, adenosquamous carcinoma and carcinochondrosarcoma may be more descriptive, the usual practice has been to designate all such lesions as metaplastic carcinomas, specifying the metaplastic component (such as infiltrating duct carcinoma with chondroid, or osseous, spindle cell, squamous, etc. metaplasia). The number of and experience in such metaplastic carcinomas are not sufficient to predict their behavior. It appears that they act much like the poorly differentiated infiltrating duct carcinoma.[34]

PAGET'S DISEASE OF THE BREAST. Paget's disease of the breast represents a form of mammary carcinoma with weeping eczematoid changes of the nipple, the areola and sometimes the surrounding epidermis. The underlying carcinoma is almost always a ductal type, with or without stromal invasion. Occasional lobular carcinoma, medullary carcinoma and papillary carcinoma have been described as the underlying carcinoma in Paget's disease.[2]

Microscopically, the epidermis of the diseased nipple and areola is infiltrated by large ovoid cells possessing an abundant clear to opaque pale-staining cytoplasm, with a large round or ovoid nucleus (Fig. 21). There is still controversy regarding the origin of Paget's cells, i.e., whether they originate in the deeper structures and gradually migrate upward or whether they represent in situ transformation of epithelial cells. The migration theory appears to be more widely accepted at the present.

According to Ashikari et al,[2] Paget's disease without palpable underlying mass is usually associated with noninfiltrating ductal carcinoma. For such cases, modified radical mastectomy is recommended. Those with palpable mass are almost always associated with invasive carcinoma. For these, radical mastectomy is the treatment of choice.

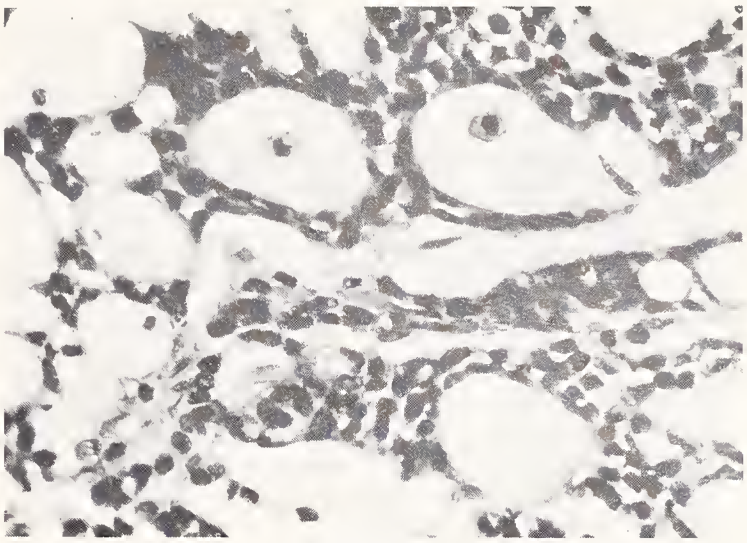

Figure 18
Adenaoid Cystic Carcinoma. Regular oval tumor cells with little cytoplasm form conglomerate cystic spaces containing basophilic material.

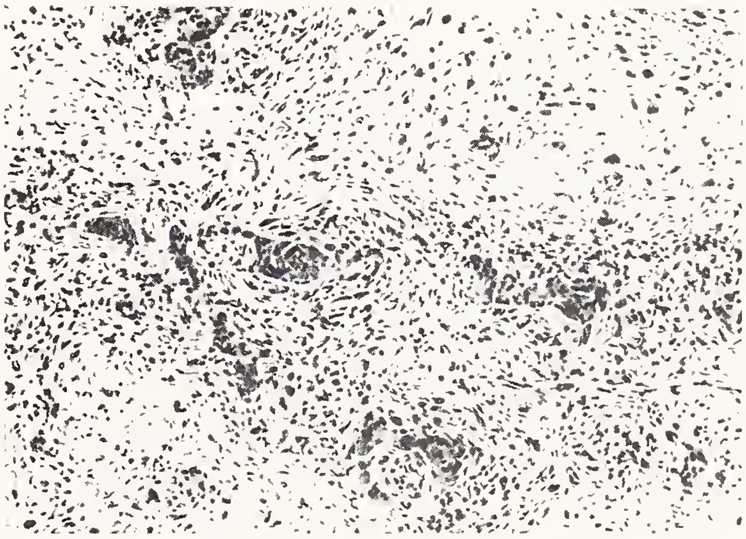

Figure 19
Metaplastic Carcinoma. Infiltrating duct carcinoma with sarcomatoid metaplasia. Large number of stellate and spindle shaped malignant cells surround the occasional obviously epithelial nests. Note the peripheral cells of these nests transform into the stellate tumor cells.

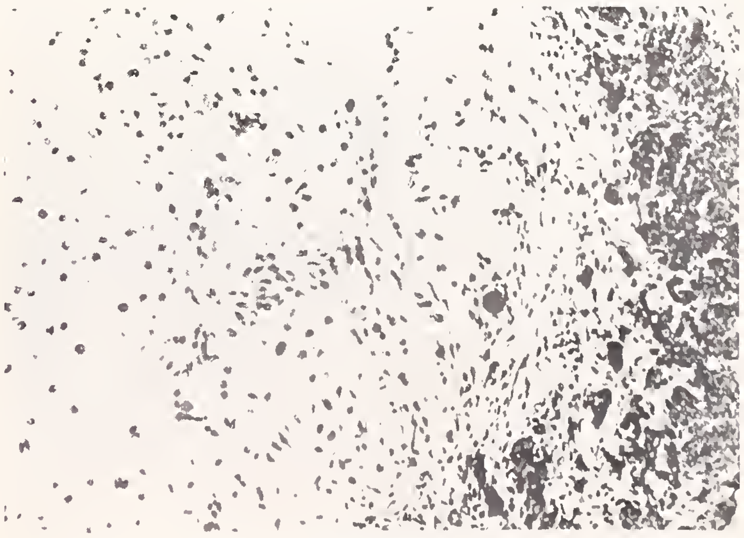

Figure 20
Metaplastic Carcinoma. Cartilaginous differentiation in a portion of a poorly differentiated infiltrating duct carcinoma.

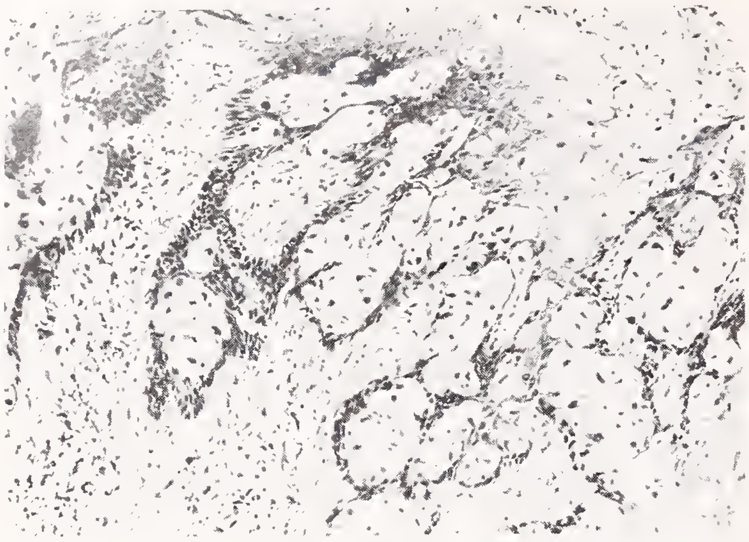

Figure 21
Paget's Disease. Irregular nests of tumor cells with pale vacuolated or foamy cytoplasm infiltrate the epidermis. The basal layer of the epidermis almost always limits the deep border of the neoplastic nests.

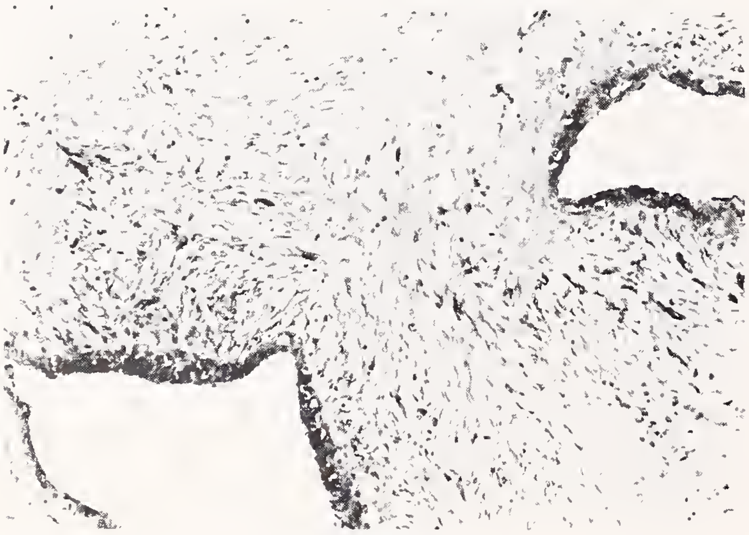

Figure 22
Benign Cystosarcoma Phyllodes. This neoplasm is an intermixture of ductal and stromal components, much like a fibroadenoma. The stroma, however, is more cellular especially around the epithelial spaces.

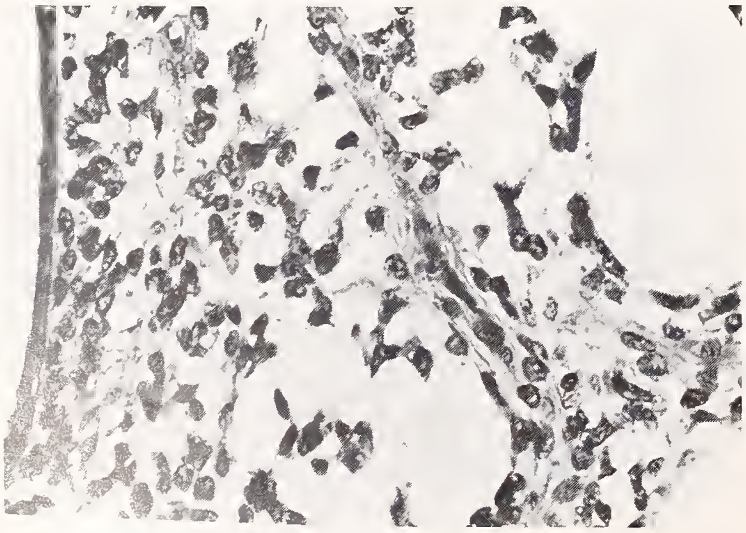

Figure 23
Malignant Cystosarcoma Phyllodes. This tumor exhibits stromal hypercellularity and atypia. A myxoid matrix is evident. Mitotic figures are frequent in other parts of this tumor. The flattened ductal lining is seen on the left.

INFLAMMATORY CARCINOMA. This neoplasm shows a diffuse edema and hyperemia of the overlying skin much larger than the localized tumor. The carcinoma may be of various histologic types but often is poorly differentiated. The hallmark is intralymphatic permeation of the breast skin by cancer cells, accounting for the edema and hyperemia. Inflammatory cells need not be present, although leukocytic infiltration may be part of the histologic picture.

It should be pointed out that dermal lymphatic permeation is a sine qua non for the diagnosis of an inflammatory carcinoma. Rarely, warm, tender, edematous, erythematous breasts with ill-defined masses pathologically failed to show dermal lymphatic permeation. This is not an inflammatory carcinoma and 5-year survival is possible for such cases. Conversely, breast carcinomas with dermal lymphatic involvement without clinical signs of inflammation have pursued a progressive course characteristic of inflammatory carcinoma.[32] It has been proposed that the term inflammatory carcinoma of the breast be abandoned and replaced by "Dermal Lymphatic Carcinomatosis of the Breast."

SARCOMAS: Sarcoma of the breast as a whole is rare. Most of the so-called cystosarcoma phyllodes may be designated giant cellular fibroadenomas and behave in a benign fashion, but can recur in about 25% of the cases. There are, however, occasional genuine malignant cystosarcoma phyllodes. The classification of a cystosarcoma as benign or malignant is based entirely on changes in the stromal portion of the tumor. The benign cystosarcoma phyllodes resembles a fibroadenoma histologically except for a more hyperplastic cellular stroma (Fig. 22). In malignant cystosarcoma (Fig. 23), the stroma displays changes similar to that seen in stromal sarcoma of the breast, with admixture of malignant fibrous, fatty and myxoid tissue in varying proportions. Malignant bone, cartilage and muscle components may be present.[23, 34]

Stromal sarcoma (Figs. 24, 25) differs from malignant cystosarcoma phyllodes by the absence of epithelial-lined canaliculi within the tumor. It may be an intermixture of fibrous, fatty, chondromyxoid components as in the malignant cystosarcoma phyllodes.[5] It usually lacks the tendency to circumscription of a cystosarcoma.

Liposarcoma is a form of stromal sarcoma, but is listed separately in the Foote and Stewart Classification. The liposarcoma of breast, like its counterpart in the soft tissue, can range from very well differentiated with preponderance of mature looking fat cells to poorly differentiated, with bizarre multinucleated giant cells forming a prominent feature of the tumor. The liposarcomas may metastasize to the axilla like a carcinoma, as well as hematogenous spread characteristic of most sarcomas.

ANGIOSARCOMA is probably the most malignant of breast cancers. The innocent histologic appearance of many angiosarcomas belies their extreme ominous prognosis.[25] The tumor microscopically may vary from highly differentiated areas resembling a capillary hemangioma to highly undifferentiated solid pattern in which the vascular endothelial nature may not be recognizable (Fig. 26). Metastasis occurs early and is extensive. Average survival of patients with angiosarcoma is but two years.[16]

LYMPHANGIOSARCOMA may follow postmastectomy with chronic lymphedema and usually involves the upper extremeties. It may follow mastectomy without edema. The lesion occurs at an average of 10 years 3 months following postmastectomy.[39] The prognosis is extremely poor. Of the 129 patients with postmastectomy lymphangiosarcoma, 65 died within 19 months after treatment. Only 11 have survived 5 years or more after treatment.

MALIGNANT LYMPHOMA. Primary lymphoma in breast is extremely rare, constituting less than 1% of all mammary cancers. Wiseman and Liao[38] in 1972 reviewed sixteen cases of which 9 were histiocytic (reticulum cell), 5 poorly differentiated lymphocytic and 2 well differentiated lymphocytic. The tumor may present as diffuse infiltration or as discrete and multiple nodules. In both diffuse and localized forms, gross section demonstrates gray-white homogenous tumor tissue without chalky streaks as seen in infiltrating duct carcinoma. Histologically, the mammary lymphomas are identical to their counterpart elsewhere in the body. There is a tendency for the neoplastic cells to infiltrate around the mammary ducts with rather good preservation of the latter. The prognosis is extremely poor in most reported series.[22, 23, 38] Only a few survived beyond 5 years after diagnosis. DeCosse et al,[10] however, reported encouraging results in their series of 14 cases, the 5-year survival rate was 64%.

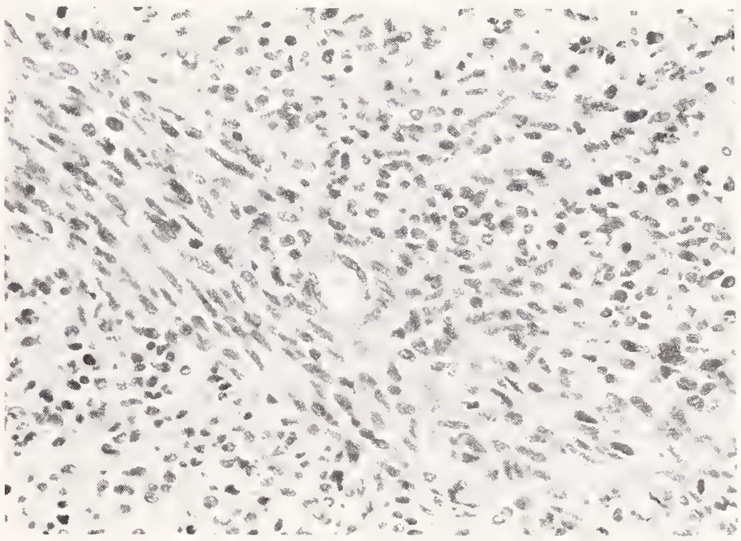

Figure 24
Stromal Sarcoma. This mammary sarcoma has the histology of a fibrosarcoma, with interlacing fascicles of spindle cells intersecting at varying angles. Mitoses are numerous.

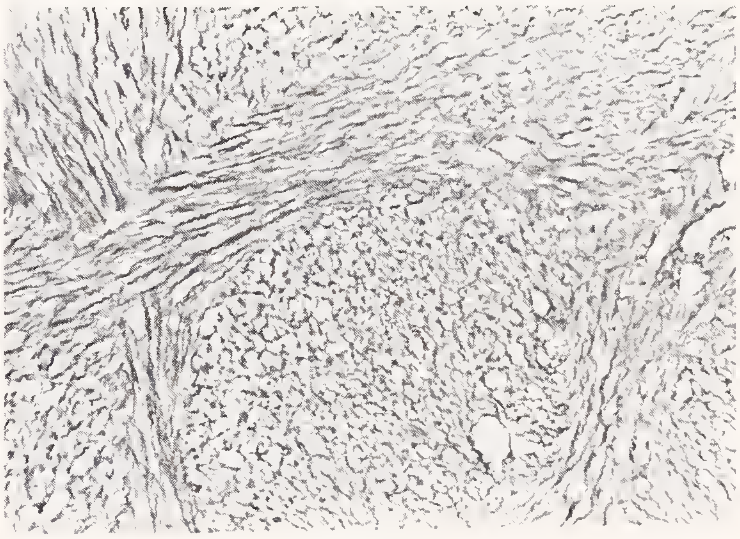

Figure 25
Stromal Sarcoma. Reticulin preparation of the same tumor as figure 24, emphasizing the interlacing pattern and the abundant reticulin fibers surrounding individual tumor cells.

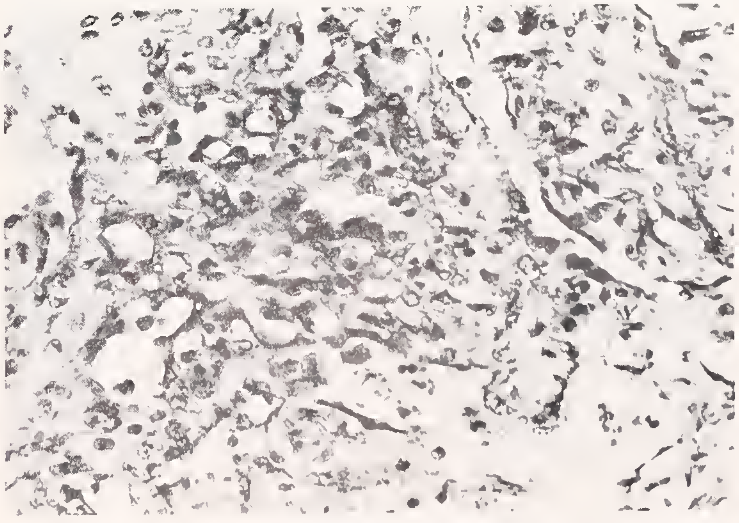

Figure 26
Angiosarcoma. Anastromosing vascular channels are lined by plump endothelial cells. The atypical endothelial cells proliferate in solid cords and sheets in some areas.

Mention should be made of cancer of the male breast. In patients with prostatic carcinoma treated with estrogen or stilbesterol, subsequent development of mammary carcinoma in gynecomastia in most instances represents metastasis from the prostate.[26] True primary carcinoma of the male breast, however, does occur,[18] albeit rare, Histologically, carcinoma of male breast duplicates patterns seen in female breast carcinoma, except for the in situ lobular and the highly metaplastic variant. Factors that influence survival for males are the same as those for the female.

Information gained from pathologic study of the specimen, other than histologic typing, also has bearing on the prognosis of breast cancer.

Our practice has been to enumerate the number of axillary lymph nodes containing metastatic cancer over the total number of lymph nodes recovered from the mastectomy specimens. Others have divided the axillary nodes into levels, using the edges of the pectoralis minor as the the muscle; Level II those beneath the muscle; and Level III those few apical nodes above the muscle.[4] In a true radical mastectomy specimen, Level III nodes and tissue are invariably included. It has been shown that the relationship between level of involvement and prognosis seems to be separate from the purely numerical aspect of nodal involvement,[4] and that there is significant difference in survival when results are analyzed on the basis of nodal involvement and the levels.

Recently, a third measure, i.e. the presence or absence of perinodal tumor — an indication of amount of cancer in individual axillary nodes — has been shown to be associated with prognosis. It has been shown that the prognosis is significantly poorer if the nodal metastasis has grown sufficiently to break through the nodal capsule. This technique has the advantage over others in that it relies on the most involved nodes and these are most likely to be taken in sections.

This bird's-eye presentation of pathology of breast cancer hopefully will provide a common ground of communication of all students of mammary neoplasia, be they a surgeon, internist, oncologist, radiologist and patholgist, and facilitate collaboration among them.

ACKNOWLEDGEMENT

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RADIOGRAPHIC DIAGNOSIS OF CARCINOMA OF THE BREAST

WILLIAM E. INGRAM, M.D.

Diagnostic Radiology as well as the other disciplines has been aware of the relentless epidemiological reality that little extension of the life expectancy of the breast cancer victim has occurred in the past thirty to forty years and not really very much since William Halstead developed the radical mastectomy in the 1890's. There had been a surge of interest at the time of the evolution of a practical technique for X-ray mammography and the hope of detecting breast cancer while it was still curable, even nonpalpable, stimulated the radiologist, primary physician, surgeon and pathologist as well. Dr. Robert Egan, among others, perfected a radiographic approach to the diagnosis of breast cancer and the Egan method was taught to radiologists on a wide scale with the auspices of the Public Health Service and the American College of Radiology. Lobular and intraductal in situ carcinoma have become more common histopathologic diagnoses as a result of mammographic detection. Specimen radiography for precise lesion localization has also become an important tool of the surgeon-pathologist-radiologist team. A much better understanding of benign breast conditions has developed synergistically as a crucial aspect of the effort.

I will say very little more about conventional X-ray mammography; partly because of time

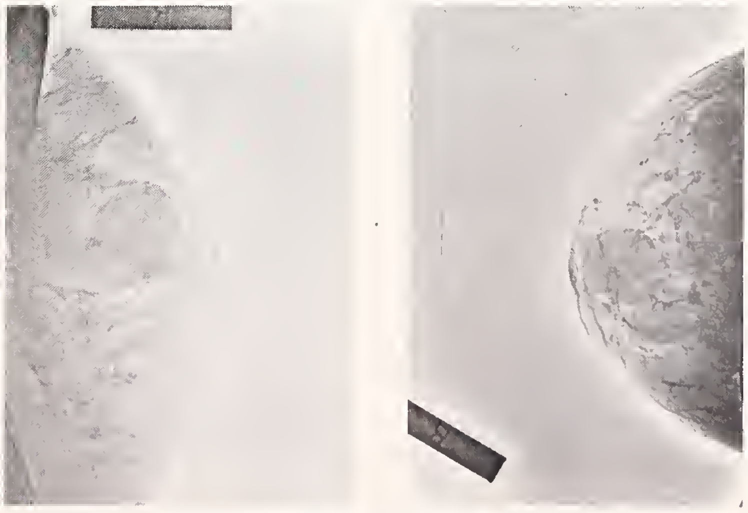

Figure 1 A & B
Cephalocaudad and mediolateral Xerograms of a 47-year-old woman with fibrocytic disease of the breast. Note numerous well circumscribed round densities reprepresenting cysts.

From: 444 West Osborn St., Phoenix, Arziona 85013 (Dr. Ingram)

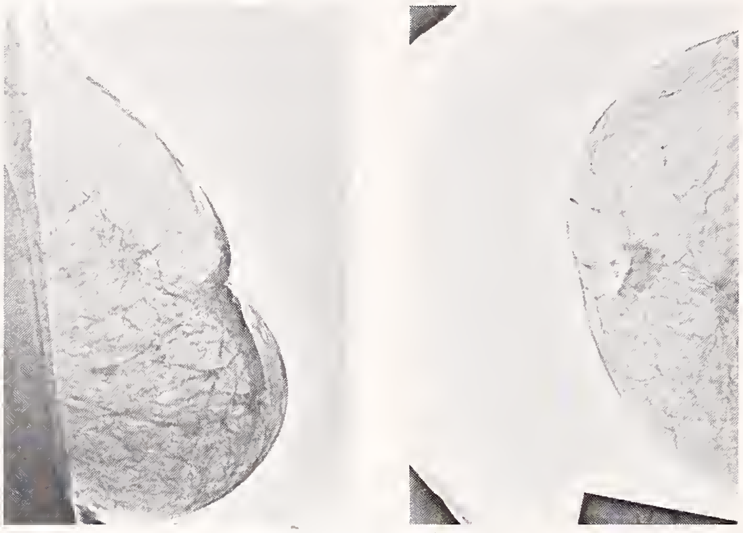

Figure 2 A & B
Xerograms of a typical infiltrating ductal carcinoma of the breast in a fifty-eight-year-old woman. Note the spiculated mass density, overlying skin thickening and nipple retraction with abnormal ductal pattern between the lesion and the nipple. In the original minute malignant calcifications were visible in the mass and adjacent ducts.

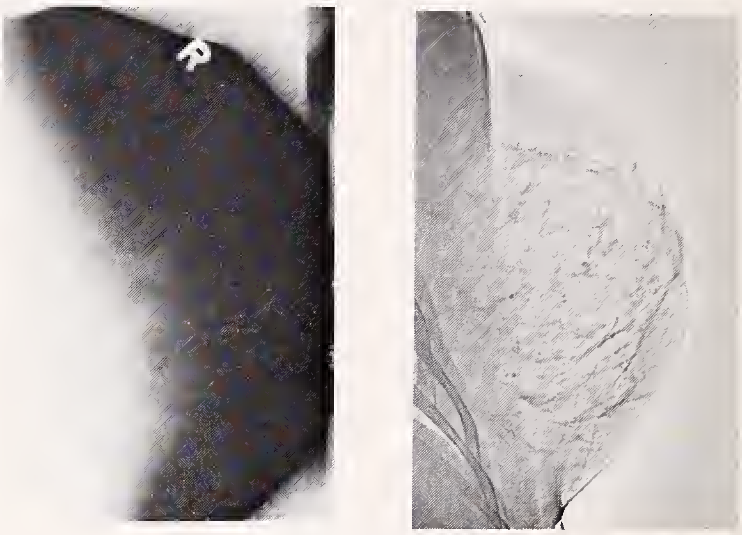

Figure 3 A & B
Comparison of a Xerogram and a conventional mammogram of the same breast. Even under ideal viewing conditions the film image cannot display the detail of all structures from skin to bone as seen in the Xerogram.

limitations but mostly because it is now becoming totally eclipsed by a new process, Xeromammomgraphy, which incorporates all the diagnostic criterion incumbent from mammography yet offers many more advantages and improvements. Conventional mammography utilizes a standard diagnostic X-ray machine with very low kilovoltage selected which produces an X-ray beam that has soft penetrating characteristics. This is in order to enhance image contrast, i.e., it is absorbed or attenuated by the breast tissue much more than the higher energy beams used in radiography of other body parts so that small differences in the density of these tissues can be seen. A refinement of this technique has also been available for several years, Senography, which instead of a rotating tungsten anode utilizes one that is stationary and made of molybdenum. The beam produced by a Senograph is of similar quality but smaller at its source. Detail of the shadows cast by the breast parenchyma is thus more precise. Importantly, both of these methods incur considerable irradiation to the patient. This is because of the high absorption beam quality as well as the inherent, limitation of the latitude characteristics of silver halide film used in conventional mammograms. Because of this limitation several exposures are required in each projection, each of slightly different quality and intensity in order to visualize the entire breast from skin to chest wall and axilla. This generates 1.5 to 3.0 rads per exposure.

Xeroradiography, on the other hand, produces images of much finer detail and such a broad display of contrast in the tissue that only one exposure need be made in each projection for excellent visualization of all parts of the breast. A standard X-ray machine or Senograph is utilized (we use both in our practice) but there is no film limitation. The image is cast by the incident X-ray beam which has been attenuated by the breast onto a uniformly charged selenium plate thus altering the charge pattern on the plate producing a latent or invisible shadow. (Selenium plates are much "faster" at low kilovoltage than any film.) A visible image is made by deposition of a fine charged blue powder onto the plate which is then transferred and fused to a sheet of plastic coated paper. The whole process is automatic and takes about ninety seconds. The plates are reusable after "relaxing" the residual charge and recharging them automatically.

The main advantages of Xeromammography over the conventional method are summarized as follows:

First: Less radiation exposure to the patient. A Xeromammogram generates 1.25 to 1.75 rad compared to 1.5 to 3.0.

Second: Much more detailed pictures are produced. Slight differences in tissue density are amplified at their interfaces by a phenomenon called "edge enhancement" or adjacency effect which is inherent to Xeroradiography.

Third: Viewing is easier. Ambient light is used rather than an illuminated viewbox.

Fourth: No darkroom or plumbing is necessary.

Fifth: X-ray tube life is extended appreciably because fewer heat units are produced in the tube per exam. Economy becomes more and more incumbent on us in medicine as we all know and an X-ray tube is no small investment.

Finally, the most important resultant advantage is the improvement in diagnostic capability Xeromammography offers. Dr. John Wolfe, the investigator singly most responsible for the development of Xeromammography to its present state, describes several series over a four-year period at Hutzel Hospital in Detroit. Test sets were administered to radiologists in several cities many of whom were not experienced in the interpretation of Xerograms. Xeromammography demonstrated a clear superiority in the diagnosis of malignant disease; 84.3% true positive versus 72.2% by conventional mammography. In benign disease the two modes were similar: 75.5% versus 75.0% true negative. Xeromammography was significantly superior in overall accuracy: 80.9% versus 73.6%. Others have reported similar results.

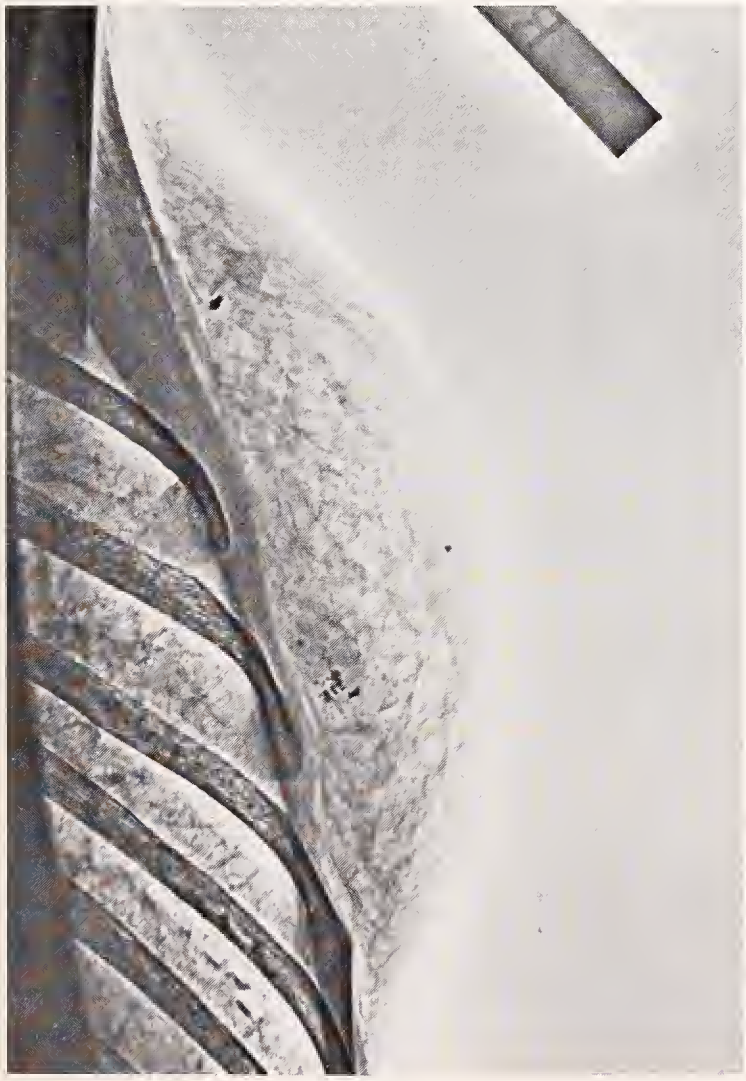

Figure 4
A Xerogram of a 42-year-oldwoman showing typical benign calcifications and lobular masses in fibroadenomata of the breast. The nipple is not profiled and shows as a hemispherical density.

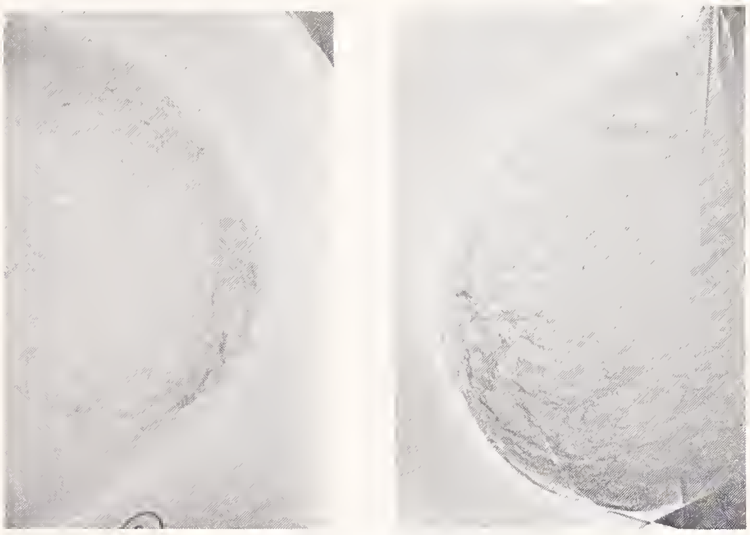

Figure 5 A & B
Xeromammograms demonstrating a small, barely palpable schirrous carcinoma in a 69-year-old woman with post menopausal fatty degeneration. The appearance of the lesion is characteristic. Small malignant calcifications were also visible in the original.

There are several well supported indications for ordering single or periodic mammographic examinations. "High risk" patients who have a lateral breast cancer, previous biopsies for cystic family history of breast cancer, previous contra- or adenomanous disease, large breasted or otherwise difficult to examine patients. Also breast symptoms such as burning, discharges, swelling, unusual tenderness or pain, masses and the like.

Briefly the diagnostic features of carcinoma of the breast looked for by the radiologist are as follows:

Primary signs are: Dominant mass densities, typical punctate calcifications which are different from most benign calcifications, and abnormal duct patterns.

Secondary signs are: Asymmetrically increased vascular markings, retraction of the skin or nipple, skin or areolar thickening and edema. When one or a combination of these findings are present it is the prerogative of the radiologist to suggest biopsy.

Evolution of new diagnostic use of electromagnentic radiation was stimulated about fifteen years ago when Dr. Ray Lawson speculated about the implications of skin temperature in the diagnosis of breast carcinoma. In the late 1950's he and others published the first breast thermograms. Infrared radiation is given off by skin much as visible light is only at a greater wave-length, i.e., "below red" 0.7 to 1000μ. Peak body IR is about 9.5μ. The thermograph, designed to detect and portray this radiation, is composed of four basic components: An *optical system* which scans the area of interest, an *infrared detector* — usually a photoconductor like mercury cadmium telluride cooled to liquid nitrogen temperature, *processing electronics* and *display* — generally a cathode ray tube or TV image which can be photographed or stored electronically.

The temperature of breast cancer exceeds that of the surrounding tissue because of its high metabolic rate. The venous flow away from malignancies is hotter than their arterial supply. Concommitantly, benign lesions are typically of normal temperature. The clinical potential of thermography particularly in Stage I lesions is promising. A capability of demonstrating tumors as small as four millimeters in diameter which have not been detectable clinically or mammographically has been documented by Dodd, Gershon-Cohen and others. Since 1964 Dodd had examined 4700 patients. Of these, 32 clinically undetectable tumors produced abnormal thermograms. One hundred and ninety-five cancers were found in all for an incidence of 4.1% in the group. There was a false positive rate of 11% in this series. Typical false negative rates 15% to 20%. The true positive rate was 85%, about the same as mammography. The precise false negative rate remains in doubt and rates from 11% to 30% have been reported. Results seem to indicate that thermography and mammography compliment one another. Thermography is beginning to serve now as a screening procedure for mammography in clinically negative patients. Those who have positive thermograms and negative mammograms should be thought of as "high risk" and reexamined periodically. Chief diagnostic criterion are, elevated temperature areas or "hot spots" and asymmetrical heat patterns. Dr. Aarts and others have attempted to qualify a technique, the specifics of which we shall not discuss here.

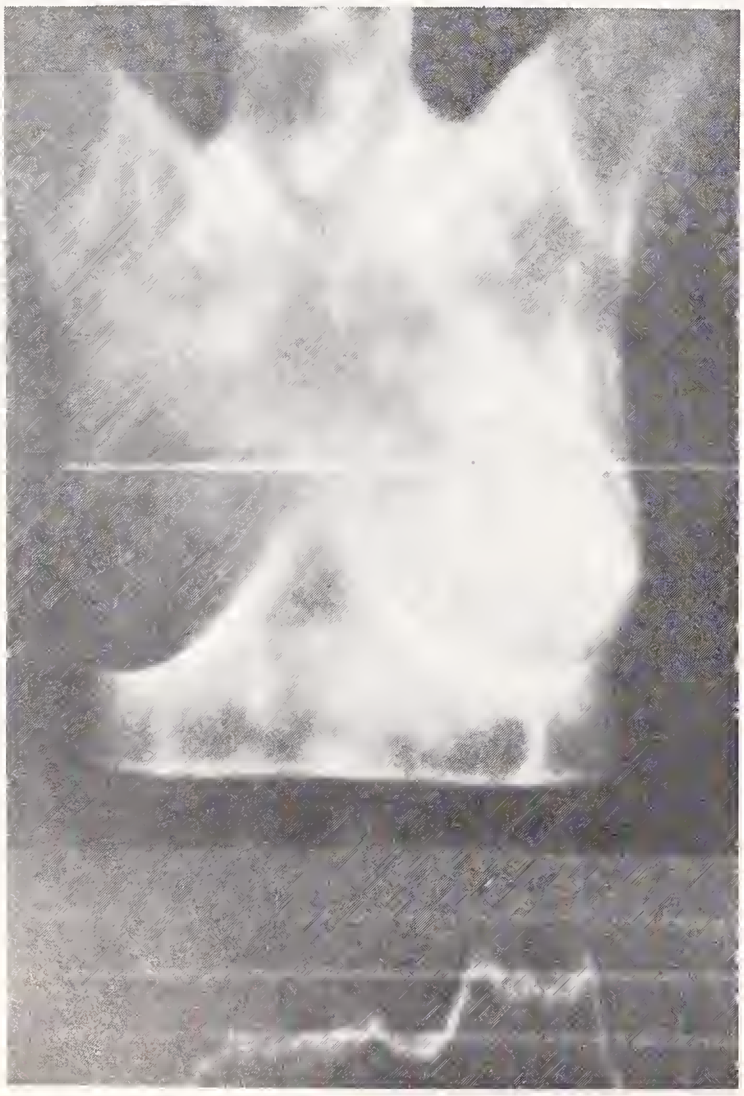

Figure 6
A thermogram of a 66-year-old woman with asymmetrically increased heat emission on the left secondary to inflammatory carcinoma. Most positive thermograms are not nearly so obvious.

In summary: Fairly recent advances in the diagnostic armamentarium, particularly Xeromammography and to a lesser extent thermography, are beginning to make encouraging contributions to the early diagnosis of malignant disease of the breast.

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CURRENT SURGICAL MANAGEMENT OF OPERABLE BREAST CANCER

GABRIEL F. de FREITAS, M.D.

There exists today no more controversial area in cancer management than the surgical treatment of primary operable breast cancer. For the past decade surgical oncologists have differed about the extent of excision needed to cure mammary cancer. Some surgeons now challenge the concept of the radical mastectomy, which, since its introduction at the end of the last century, has been the most commonly employed surgical procedure in the United States for the treatment of this disease.

The control of mammary cancer offers an enormous challenge to the physician. Breast cancer affects one out of 15 women, accounts for 25% of all cancers, is the most common cause of death in women 40-45 years of age, and is the most common cause of death from cancer at any age. The American Cancer Society estimates that 90,000 new cases will be diagnosed and 33,000 deaths from this disease will occur in the United States in 1974.[1] Despite attempt at control no change has been noted in the mortality from this devastating cancer over the past 35 years.

SURGICAL PROCEDURES

Five surgical operations or variations of them are employed in the surgical approach to clinically curable breast cancer.

1. *Simple Excision* (Figure 1): Over the past several years the pendulum has been swinging from larger surgical operations which may produce significant deformity, such as radical mastectomy, to smaller operations which are less deforming. At one extreme lies the smallest resection, simple excision of the breast lump along with a variable amount of surrounding tissue, the so-called "lumpectomy." This operation has found little enthusiasm among surgeons as a curative procedure. The most compelling reason against it is the fact that breast cancer may be a malignancy of multicentric origin, and, by removing only the clinically detectable cancer, an occult malignancy may be missed. A recent study[2] has shown that, in 60% of mastectomies performed, residual tumor was microscopically identified adjacent to the biopsy field, despite the fact that a biopsy was taken big enough to include what appeared to be normal surrounding tissue. There appears to be little rationale in the application of this technique for cure, except perhaps in neoplasms of limited malignant potential, such as low-grade cystosarcoma phyllodes. It may, however, be utilized as a reliable palliative method of treatment in the poor risk patient.

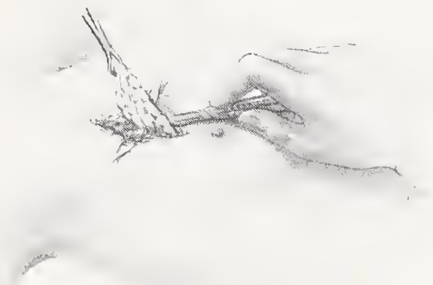

Figure 1
Partial Mastectomy (Lumpectomy): Simple excision of the tumor with a margin of normal surrounding tissue is done. The equivalent of a large biopsy, in which as much as an entire quadrant of the breast may be removed.

2. *Total Mastectomy* (Figure 2): The term "total mastectomy" has replaced the previously used term "simple mastectomy," which did not convey the concept of complete excision of all breast tissue. Because the breast tissue extends as far as the clavicle, to the lower rib margin, and up to the superficial fascia, skin flaps must be elevated by dissection in total mastectomy, exactly as is done in both the radical and modified mastectomies. In total mastectomy the entire breast is removed, along with the nipple and

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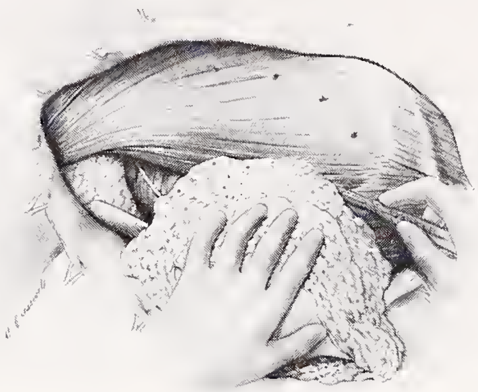

Figure 2
Total Mastectomy (Simple Mastectomy): Complete removal of all of the breast tissue with overlying skin and nipple. Skin flaps must be widely elevated because breast tissue extends well beyond the incision. The axillary lymph nodes are not removed; and hence, presence of metastasis cannot be determined.

overlying skin. The chest muscles are not removed, and the axillary lymph nodes are not excised. Total mastectomy is best reserved for benign neoplasms and tumors with minimal malignant potential, such as cystosarcoma phylloides. Small non-invasive neoplasms, such as lobular carcinoma in-situ and intraductal carcinoma, may be successfully cured by this surgical operation, because these tumors do not commonly metastasize to axillary lymph nodes. This procedure may be indicated also for palliation in the poor risk patient or for removal of a breast containing a large necrotic cancer. Frequently used with post-operative radiation therapy for local control of disease, it can be performed quickly and with an acceptable morbidity.

Subcutaneous mastectomy is incorrectly considered by some to be equivalent to total mastectomy. However, complete excision of *all* breast tissue cannot be accomplished through the commonly employed submammary incision. This technique may be indicated for cystic mastitis where multiple biopsies have been done previously, making adequate follow-up clinical examination and evaluation of a scarred breast difficult if not impossible. It may rarely be indicated for cancerophobia. Silastic prostheses are usually inserted after removal of the breast tissue. The clinician, however, must be alerted to the need for periodic post-operative breast examination since the 10-15% of the breast tissue that cannot be removed by this technique may become cancerous.

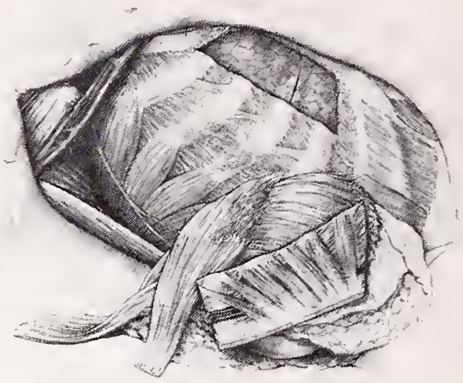

Figure 3
Modified Radical Mastectomy: Total mastectomy plus en bloc removal of all accessible axillary nodes. Nodes at the apex of the axilla (Level III) are inaccessible. The pectoral muscles are preserved.

3. *Modified Radical Mastectomy* (Figure 3). This procedure has been applied with increasing frequency over the past several years for invasive breast cancer. Its advantage over the radical mastectomy lies in the less post-operative deformity and swelling of the arm seen following it. This technique avoids the "skin and skeleton" appearance seen following radical mastectomy since the pectoral muscles are preserved. The initial steps in the technique are identical to the total mastectomy; the entire breast is excised with the overlying skin and nipple. But, unlike the total mastectomy, all accessible axillary lymph nodes are removed. The chest muscles are elevated with retractors to facilitate exposure and excision of lymph nodes. Since the axillary lymph nodes are available for microscopic examination a prognosis can be made and, more importantly, excision of nodal metastatic disease will cure a certain number of Stage II cases (metastatic carcinoma present and limited to the axillary lymph nodes).

The importance of the level of lymph node involvement by metastic disease as a prognostic factor has been known for many years. The axilla is arbitrarily subdivided into three levels (Figure 4): Level I, low axilla, lateral and inferior to pectoralis major; Level II, mid-axilla, posterior to pectoralis minor; Level III, apex of axilla, medial and superior to the pectoralis minor. As metastases ascend from the lowest to the highest level, survival diminishes. However, survival statistics have shown that even when

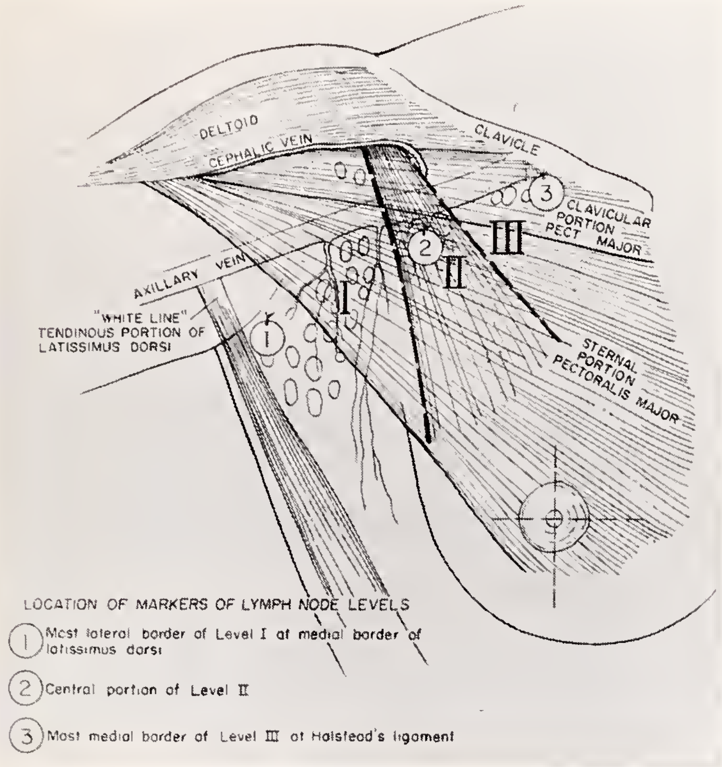
DELTOID
CEPHALIC VEIN
CLAVICLE
3
CLAVICULAR PORTION PECT MAJOR
III
2
II
AXILLARY VEIN
I
"WHITE LINE" TENDINOUS PORTION OF LATISSIMUS DORSI
1
STERNAL PORTION PECTORALIS MAJOR
LOCATION OF MARKERS OF LYMPH NODE LEVELS
① Most lateral border of Level I at medial border of latissimus dorsi
② Central portion of Level II
③ Most medial border of Level III at Halstead's ligament

Figure 4

metastases reach the highest level, Level III, 15-year survival may be as high as 10%. Excision of lymph nodes at Level I and probably most of Level II can be accomplished without removal of the muscles, but it is doubtful that Level III can be completely dissected without their removal. Radical mastectomy would permit access to Level III, but the number of instances where Level III is involved by metastases is small. Minimal breast cancer consisting of small infiltrating duct cancers, non-infiltrating duct cancers, lobular carcinoma in-situ, and occult cancer discovered by mammography can be successfully cured by modified radical mastectomy. The dilemma in the surgical approach to breast cancer rests on whether larger invasive breast cancers can be successfully cured by modified mastectomy.

Modified radical mastectomy adds very little time and morbidity to total mastectomy and has the added advantage of curing Stage II disease, as well as providing the axillary lymph nodes for microscopic examination.

4. *Classical Radical Mastectomy* (Figure 5): Since its introduction by Halstead and Myer at the end of the last century this surgical operation has been the most commonly applied procedure for the treatment of clinically curable breast cancer. This technique consists of en bloc excision of the entire breast along with the pectoral muscles and removal of all of the axillary lymph nodes at Levels I, II, and III. Indications for this procedure are invasive breast carcinoma localized to the breast or axilla. Contraindications are metastatic disease, poor risk patients, inflammatory cancer, edema of the arm, fixation of the tumor to the chest wall, and in instances where extensive skin involvement by tumor is seen. The disadvantages have already been mentioned, the increasing morbidity of post-operative lymph edema of the arm in a small percentage of cases and deformity resulting from removal of the chest muscles. The important question is whether survival is improved by removal of the muscles justifying the risk of radical mastectomy.

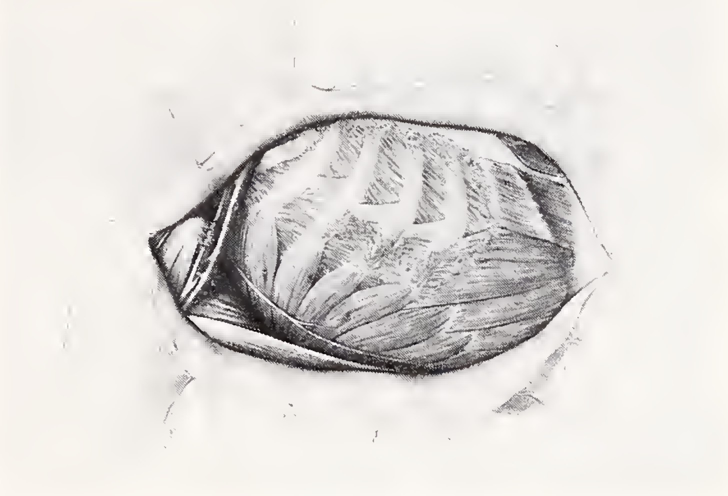

Figure 5
Radical Mastectomy (Classical Halstedian Mastectomy): Total mastectomy plus removal of the pectoral muscles (major and minor) plus en bloc excision of the axillary lymph nodes, preferably in continuity.

The classical radical mastectomy can be performed with an acceptable degree of risk and morbidity. However, solution of the controversy of modified versus radical mastectomy will probably not be seen for several years.

5. *Extended Radical Mastectomy* (Figure 6): 75% of the lymphatic drainage of the breast goes to the ipsilateral axilla and the remaining 25% drains mostly into the ipsilateral internal mammary lymph node chain.[4] Urban has demonstrated that in medial quadrant tumors when metastatic involvement of the axillary lymph nodes has occurred, there is an increasing involvement of the internal mammary node chain. Therefore, the classical radical operation would fail as a cure in a significant percentage of operable cases. Removal of the internal mammary chain in cases when tumors occupy the central or medial parts of the breast would theoretically cure some of these. Urban has been the biggest advocate of this operation in the United States.

This technique adds en bloc removal of the internal mammary node chain to the classical

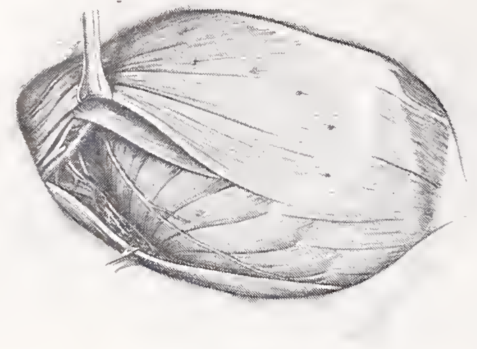

Figure 6
Extended Radical Mastectomy (Urban Operation): Radical mastectomy plus en bloc and excision in continuity of the internal mammary nodes, including partial removal of overlying ribs and sternum. May be indicated in medial quadrant and subareolar cancers.

radical mastectomy. Excision of the internal mammary nodes is accomplished by in continuity removal of part of the second through sixth ribs and part of the sternum. This operation has not been widely adopted because most surgeons have not been trained to do this, and there still remains the question of how many more patients are cured by this procedure than by the radical mastectomy.

Indications for this procedure are invasive mammary cancers that involve the medial or inner quadrant of the breast. Urban has generally excluded patients over the age of 65 and those with significant concommitant medical diseases. As with the classical radical mastectomy, its place in the treatment of operable breast cancer remains controversial.

SUMMARY

The commonly used operations for operable breast cancer have been listed. Selection of a specific procedure whether small or big depends upon many factors, such as the experience of the surgeon, type and location of the tumor, clinical staging, and risk factors involved. The status of the modified and of the radical mastectomy operation has a secure place in the present surgical management of this disease. As the emphasis on earlier detection of minimal cancer *increases* it is possible that the need of larger excisions will *decrease*.

The author is grateful to Miss Marti Cresswell for the medical illustrations.

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ON THE NON-CARDIAC TOXICITY OF DIGITALIS

JAMES F. BLUTE, JR., M.D., F.A.C.P.

In the past few years a number of patients have come under my observation demonstrating various deleterious effects of digitalis upon structures other than the cardiovascular system. I will leave to others a discussions of the unwanted arrhythmic phenomena of digitalis toxicity.

Such effects may be the result of: (1) overdosage, either absolutely or from diminished metabolism or excretion, (2) intolerance, a lowered threshold to a normal action, (3) idiosyncracy, an inherently abnormal reaction, or (4) hypersensitivity, an antigen-antibody reaction[1]

In 1785 William Withering published his observations on the use of digitalis, although it had been known and used for many years.[2] After ten years of personal experience with digitalis he wrote his book, partly to report on the diuretic effect of digitalis, but also to protest against the abuse of this drug by those who improperly administered it. From the very beginning Withering recognized the toxic properties of digitalis — both cardiac and extracardiac — when he wrote "The foxglove, when given in very large and quickly repeated doses, occasions sickness, vomiting, purging, giddiness, confused vision — objects appearing green or yellow — increased secretion of urine with frequent motions to part with it, slow pulse, even as slow as 35 in a minute, cold sweats, convulsions, syncope, deathe."

The effect of digitalis upon the gastrointestinal tract is common and is the most well known. When digitalis leaf was a more commonly used

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preparation these symptoms were recognized as an early sign of toxicity. The purified glycosides have less emetic activity, which may or may not be an advantage, since now a more serious cardiac arrhythmia may suddenly appear without any preceding warning from a distressed gastrointestinal tract. Anorexia, loss of appetite, nausea, vomiting and diarrhea are signs of digitalis effect on the gastrointestinal tract. Most of these seem to be the result of stimulation of cerebral centers rather than any local gastric effect, since they occur whether the digitalis is given orally or parenterally.[3]

A common example is that of a 72-year-old lady started on a daily dose of 100 mgms of digitals who, two weeks later, developed nausea and vomiting. This improved when the digitalis was stopped. A year later cardiac failure recurred and digitalis once again caused nausea. This is the most common non-cardiovascular effect of digitalis.

Occasionally changing the form of digitalis relieves the symptoms, as in the lady who became nauseous with digitalis leaf, but not gitaligen.

Much less commonly, gastrointestinal symptoms may be allergic. Rarely, a single tablet of digitalis will produce diarrhea and vomiting. This was the situation in a 62-year-old man in whom one tablet of 100 mgm of digitalis leaf was quickly followed by a profuse diarrhea which lasted for 36 hours. A single pill of digitalis one week later produced the same effect.

The sequence of anorexia from cardiac failure, progressing to a better appetite with cardiac improvement, and then a return of anorexia due to digitalis toxicity is all too frequently overlooked.

A more unusual, and a more serious, toxic effect on the gastrointestinal tract is acute hemorrhagic enterocolitis. This may be fatal. It is not clear how this occurs, but it has been suggested that it may result from a constrictive effect of digitalis on the hepatic veins with pooling of blood in the spanchnic area.[4]

Digitalis has been shown to produce venous constriction. This occurred in an elderly man receiving Lanoxin who was seen because of marked cyanosis of his fingers. When an arrhythmia developed, the Lanoxin was stopped, and the cyanosis disappeared. Two weeks later, after 4 doses of Lanoxin, the cyanosis reappeared, but not the arrhythmia. Since permanently stopping the digitalis he has had no cyanosis.

The central nervous system may be affected by digitalis. Digitalis delirium was first described by Duroziez just a century ago. It is reported that delirium and hallucinations occur in 3-4% of patients with digitalis toxicity,[5] and may appear in the absence of electrolyte changes, sedation or anoxia.[6] As mentioned above, anorexia, nausea and vomiting are most probably direct central nervous system effects rather than a local gastric problem.

Eye problems were noted early in the history of digitalis use. Withering mentions "confused vision." It has been estimated that ocular changes appear in 10-25% of people with digitalis toxicity. These are variously described as blurred or foggy vision, difficulty in focusing, flashes of colors, or there may be scotomata or diplopia. Visual acuity becomes poorer in the daytime than at night.[7]

Typical patients were a 78-year-old woman, who, after 200 mgm of digitalis developed nausea and flashes of bright lights in her eyes, and a 70-year-old man, who, after receiving 1600 mgms of digitalis leaf in the course of one week became nauseous and two days later noticed that objects appeared yellow and out of focus.

Progressive loss of vision may be a serious problem, as in a 54-year-old man in whom, after two weeks of digitalis, an ophthalmological consultant found dimness of vision and a vasospastic retinitis. This disappeared one week after stopping digitalis. Five months later he was given digitalis and once again loss of visual acuity appeared, and remained until the digitalis was stopped.

Gynecomastia contributes about 1-2% of the symptoms of digitalis toxicity. Chemically, digitalis shares a common four-ring phenanthrene nucleus with steroids and estogens. The estrogenic effect of this molecular configuration, in the presence of liver dysfunction, either from congestive heart failure or from primary liver disease, is probably the cause of the breast enlargement.[8]

This usually appears after prolonged administration of digitalis. It is necessary to exclude other causes of breast enlargement, such as carcinoma of the lung or hepatic cirrhosis.

A typical patient is an 84-year-old man who, after 100 mgms of digitalis daily for six years, developed bilateral swelling and tenderness of his breasts, more marked on the right. The digitalis was continued and over the next two years the gynecomastia become smaller, but never completely disappeared, although there was no more tenderness or nipple sensitivity.

The molecular configuration of digitalis also has other effects. The chronic administration of digitalis increases serum estrogen levels in males and post-menopausal women.[9] An estrogenic effect upon the vaginal epithelium may be found in a Papanicalaou preparation, even after ovariectomy. An example of this is that of a 56-year-old woman who had had a supracervical hysterectomy and bilateral oophorectomy 18 years ago. A Papanicalaou vaginal smear was reported as showing changes consistent with an elevated estrogen level on the vaginal epithelium, although she was not receiving any estrogenic substance.

Allergy to digitalis occurs but is rare. Urticaria has been reported, as well as fever, joint tenderness and facial edema.[10] Gastrointestinal allergic reactions may occur, as in the rare patient who repeatedly responded with a profuse diarrhea to a single tablet of digitalis.

In giving digitalis there is need to evaluate the patient's age, weight, cardiac disease, complicating illnesses, diuretic and other drug therapy, and electrolyte balance. In elderly patients the half-life of digitalis is longer than in younger persons, probably due to a smaller body size or to diminished renal excretion.[11]

In practically all discussions of digitalis toxicity the most significant predisposing factor was the inappropriate administration of digitalis.

The proper dose of digitalis is really a bedside experiment in which the choice of digitalis preparation is less important than the wise and knowledgeable use of the one chosen.

In summary, I have reported on a group of patients who demonstrate some of the deleterious effects of digitalis upon non-cardiovascular structures, including the gastrointestinal tract, central nervous system, eye, breast and vagina, as well as allergic reactions. As clinicians, we must keep these in mind so that we do not neglect or ignore the non-cardiac effects of this potent drug.

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HYPERLIPIDEMIA: TO TREAT OR NOT TO TREAT

WILLIAM B. PARSONS, JR., M.D.

Nearly twenty years ago I administered the first high-dose nicotinic acid therapy for hyperlipidemia in this country. At that time hypercholesteremia was known to be associated with increased risk of heart attack, stroke, and other atherosclerotic complications. However, there was no proof that reducing elevated cholesterol levels in humans would decrease the incidence of these life-threatening calamities. Today there is evidence in this direction but still no conclusive proof. Consequently, clinicians still face the question posed by the title of this paper. It is a privilege to share with you my reasoning on this matter and invite comparison with your clinical experience.

WHY CONSIDER TREATMENT?

Let us first review why we consider treatment of hyperlipidemia at all. In recent years, approximately 54% of deaths in the United States have been attributed to cardiovascular disease, most of them (about 35% of the total) to heart attacks. Each year more than 600,000 persons in this country die of coronary artery disease. About four out of seven of them (350,000) die suddenly. These sudden deaths represent 20% to 25% of all coronary events and 50% to 60% of all athersclerotic deaths.

The Framingham Study showed that of all deaths from *first* heart attacks, more than 50% were sudden and unexpected, unheralded by any prior symptoms. Therefore, if we are to make significant inroads on the devastating toll of death and disability from atherosclerotic disease, we must shift our major emphasis away from the tip of the iceberg—clinically recognizable coronary disease—and toward prevention of the underlying process. Recent years have seen a tremendous expenditure of time and effort on treatment of end-stage coronary disease with coronary care units, crash carts, early-care ambulance services, arteriographic and surgical techniques. Without intending to derogate these efforts to treat victims in the final stages of a fatal disease (sometimes even after death), does it not make sense to exert whatever preventive efforts we can by identifying the factors most closely associated with risk of heart attack and modifying them in a favorable direction?

The answer is not an automatic 'yes.' This question must be answered separately for each of the risk factors, based on either proof or probability of risk reduction by successful therapy. The treatment in some instances has fringe benefits, unrelated to atherosclerotic disease, which may influence the decision.

MAJOR CORONARY RISK FACTORS

From many correlative studies, retrospective and prospective, six major coronary risk factors* *which can be measured and treated* have emerged. Of these, the most significant are *hypertension, cigarette smoking*, and *hyperlipidemia;* less significant (in terms of increased risk) but nevertheless important are *lack of exercise, diabetes*, and *excessive weight.*

Some factors which predict risk (age, sex, heredity) can be measured but not altered. (However, the hereditary trend sometimes results from one of the previously-listed factors, which *can* be treated. A strong family history is, at the very least, good reason to treat all risk factors which are unfavorable.) Other factors, such as electrocardiographic changes, represent effects rather than causes of atherosclerotic disease.

For the three less potent risk factors listed above, there is suggestive but inconclusive evidence that their correction reduces coronary risk. However, in each case other benefits (*Table I*) justify treatment on its own merits, regardless of risk reduction. Regarding two of the three more potent factors, proof *does* exist that adequate antihypertensive therapy or elimination

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*Although usually called "coronary risk factors," these characteristics are almost identically related to risk of cerebral or peripheral atherosclerosis.

TABLE 1
Rationale for Treatment of Major Coronary Risk Factors

	Does correction reduce risk?	Other benefits
Hypertension	Yes	Prevent accelerated hypertension.
Cigarette smoking	Yes	Less lung cancer, chronic bronchitis, emphysema, etc.
Hyperlipidemia	Maybe	None (Weight loss from diet?)
Lack of exercise	Maybe	Look, feel better. Help control weight.
Diabetes mellitus	Maybe	Avoid ketoacidosis. Avoid late complications?
Excessive weight	Maybe	Look, feel better. Less hypertension, hyperlipidemia, diabetes.

of cigarette smoking reduces risk of atherosclerotic complications. There are associated benefits, particularly in cessation of smoking (*Table I*).

The situation regarding the other potent factor (hyperlipidemia) is not so clearcut. Evidence is accumulating, but lipid-lowering therapy has not yet been shown conclusively to reduce coronary risk, nor can other benefits be claimed—except possibly loss of excessive weight by appropriate diet. Detractors are fond of pointing out that the "lipid hypothesis" has not been proved. In the labeling and advertising of lipid-lowering drugs, the Food and Drug Administration requires a statement that "It has not been established whether drug-induced lowering of serum cholesterol or other lipid levels has a detrimental, a beneficial, or no effect on the morbidity due to atherosclerosis or coronary disease. Several years will be required before current investigations can yield an answer to this question."

Without disputing the basic truth of this disclaimer, I see two objectionable features in it. First, to be consistent, a similar restraint should be imposed against implied claims in food advertising such as "highest in polyunsaturates" or "contains no cholesterol." Second, the statement might foster a "wait and see" attitude regarding treatment of even severe lipid disorders by seeming to promise an answer to the lipid hypothesis within a few years. Unfortunately, the important question—that of primary prevention, by treatment of high risk individuals before clinical manifestations appear—will *not* be answered in the next decade. We will return to this point later.

Despite the lack of definite proof, the consensus of informed opinion for many years has held that it is desirable to reduce elevated serum levels of cholesterol or triglycerides. The findings in several studies of dietary treatment indicate that appropriate lipid reduction *does* lessen mortality and morbidity from coronary disease. (See *Table II.*) Although no definitive results from studies with lipid-reducing drugs are yet available, properly selected drugs reduce lipids more effectively than diet; therefore, it is logical that the results of long-term drug therapy might surpass those in the dietary studies just cited.

TABLE 2
Effect of Lipid Reduction by Dietary Measures on Mortality and Morbidity of Coronary Disease

Name, Location	Participants	Duration	Major Findings
Leren[1] (Oslo)	412 men (post-MI)	5 years	*Fewer MI's* and deaths
Turpeinen *et al*[2] (Helsinki)	1000 men and 1000 women (mental hospitals)	12 years (crossover)	Fewer *coronary deaths (M, F)* and total deaths (M)
Dayton *et al*[3] (Los Angeles)	846 men, age 54-88 (VA Home)	6.5 years (mean)	31% fewer *atherosclerotic* deaths
Bierenbaum *et al*[4] (Montclair, N.J.)	200 men, age 30-50 (post-MI)	10 years	*17% better survival*

Results *underlined* = statistically significant;
not underlined = trend, not statistically significant

Abbreviations: MI = myocardial infarction
VA = Veterans Administration
M = male
F = female

There is less agreement regarding who needs such treatment and what form it should take. Should physicians treat: (a) only persons with the highest lipid levels, (b) all those with elevated lipids (except over 65 or thereabouts, because somewhere around this age the risk factors become inoperative), or (c) everyone, regardless of lipid levels? At present my answer would be "(b)."

IDENTIFICATION OF HYPERLIPIDEMIC INDIVIDUALS

Because hyperlipidemia is quite common and usually asymptomatic, the decision to treat this risk factor involves an obligation to identify persons with the disorder. This means testing all adults (to age 60-65), either when they appear for medical care or in community screening programs. Hypercholesteremia occurs in 20% to 25% of adults in this country. In the Madison Project, in which we screened more than 12,000 persons in four hours on a single Sunday morning,[5] 28% of participants (ages 30-64) had hypercholesteremia (above 250mg%). When those with hypertriglyceridemia (above 180 mg%) were added, hyperlipidemia was present in 35% of the participants (37% of men, 33% of women).

What levels are satisfactory and which are elevated? In clinical practice, this is no pat answer to this critical question. In each patient the decision should be tempered by *age,* the presence and severity of *other risk factors,* and the presence or absence of significant *associated disease.* The threat of premature vascular disease from any given degree of hyperlipidemia is greater in a younger individual than an older one and dwindles to insignificance by about age 65, as previously mentioned. When other risk factors predominate (for example, significant hypertension or a refractory two-pack-a-day cigarette habit), it makes little sense to concentrate one's therapeutic efforts on mild hypercholesteremia in a middle-aged individual. Likewise, very few doctors would vigorously treat hyperlipidemia in a patient dying of a malignant neoplasm.

To complicate the definition of a "satisfactory" level for serum lipids, many (perhaps most) medical laboratories have replaced more accurate manual determinations of serum cholesterol with imprecise automated methods, performed directly on serum. To prescribe long-term, even lifelong, therapy on the basis of such tests is impromper. A practical approach is to consider the direct, automated method as a screening test and order lipid determinations by a more accurate method for patients reported to have cholesterol values above the stated normal limit. Because more than 25% of adult patients are hyperlipidemic, physicians should prevail on their laboratory directors to install extractive, semi-automated methods for both cholesterol and triglycerides. Such tests require only a preliminary extraction step with an organic solvent and are quite accurate when properly standardized. Both lipid determinations can be done simultaneously on the same extract if laboratory volume warrants a two-channel machine. If accurate tests cannot be arranged locally, a simple expedient is to find a commercial laboratory which uses the extractive methods.

For cholesterol, 250 mg% by traditional methods (roughly comparable to 300 mg% by direct, automated methods?) is a reasonable cutting point, inasmuch as higher concentrations are associated with at least a twofold risk of heart attack. Similarly, triglyceride levels higher than 260 mg% at least double the risk of heart attack. Some prefer to treat any person with triglycerides above the stated upper normal limits (either 150 or 180 mg%), most often by reducing the excessive weight which usually accompanies hypertriglyceridemia.

WHY NOT "WAIT AND SEE?"

Why not defer the "to treat or not to treat" question while awaiting the results of studies currently in progress? My reply is that no current study will answer the *primary* prevention question (whether treatment for hyperlipidemia will benefit individuals who have not already suffered a heart attack, stroke or other late manifestation of atherosclerosis) within the next decade. Let's look at a few such studies.

The Coronary Drug Project (CDP) is a *secondary* prevention study; i.e., its participants were chosen because they had survived one or more previous myocardial infarctions, not because of hyperlipidemia. As a result, 4,370 of its 8,341 men (52.4%) had serum cholesterol levels below 250 mg% at baseline.

The CDP results, still kept secret even from the cooperating investigators when I left one of its 53 centers to move to Arizona last January, will become available after the study ends in February 1975. The results *will* show what success the two surviving CDP drugs (nicotinic acid and clofibrate) have had in reducing lipid levels.* However, it is a fair guess that the hoped-for benefit on atherosclerotic complications will be lacking. There are at least three reasons for this prediction: (1) as noted, the considerable number of participants without hypercholesteremia; (2) relatively advanced atherosclerosis in all participants; and (3) the relatively small numbers (1,200 or fewer) allocated to either nicotinic acid or clofibrate. (Besides those assigned to the three discontinued regimens, the study design provided a placebo group twice as large as any drug groups.)

Other studies, also sponsored by the National Heart and Lung Institute (NHLI) and involving intervention against adverse risk factors, are likewise almost certain to fall short of a real answer to the primary prevention question. The Multiple Risk Factor Intervention Trial (MRFIT) seeks to intervene in individuals at the highest risk—those with all three of the most potent risk factors: hypertension, cigarette smoking, and hyperlipidemia. However, intervention against hyperlipidemia is limited to dietary measures, which are relatively ineffectual in comparison to pharmacologic therapy. Any clinician could predict that, in the absence of some newly effective motivational scheme, interdiction of cigarette smoking will also be relatively ineffective. This apparently is proving to be the case, as evidenced by the change from the original objective (having participants *quit* smoking) to a limited goal (having them *cut down*). This leaves antihypertensive therapy as the only intervention likely to be successful. The MRFIT will probably demonstrate little or nothing beyond the already-known reduction in risk of heart attack by control of hypertension.

In its Lipid Research Clinics (LRC), NHLI is sponsoring another study, this one limited to men with Type II hyperlipoproteinemia (pure hypercholesteremia). All participants are asked to maintain a relatively low cholesterol diet, capable of lowering the blood level by roughly 5% to 10%. About half of the men also receive cholestyramine resin, which could reduce cholesterol levels by 25% or more. This seven-year study may shed some light on the primary prevention question. Athough it profited in many ways from CDP experience, the LRC Type II Study unfortunately ignored the two successful CDP drugs, deciding instead to use a resin which is expensive, is poorly accepted by patients, and has other notable disadvantages (*v.i.*).

If you accept my premise that the next decade will not see a definitive answer to the primary prevention aspect of the lipid hypothesis, you and all clinicians must continue to base a decision to treat or not to treat hyperlipidemia on current evidence and your best clinical judgment. Any who would contend that therapy for hyperlipidemia represents a clinical experiment should be reminded that a decision *not* to treat also constitutes an experiment—and one which, in light of present evidence, is difficult to justify.

My attitude regarding treatment of hyperlipidemia is aptly summarized by the words of Dr. Thomas R. Dawber, first director of the Framingham Project: "Though the methods for changing risk characteristics are far from perfect and the evidence of benefit from change still has to be obtained, reasonable physicians act in accordance with the maxim of Dr. Samuel Johnson that 'Nothing will ever be attempted if all possible objections must first be overcome.'"[6]

PROCEDURE FOR EFFECTIVE THERAPY

The decision to treat hyperlipidemia should include a commitment to treat it effectively. Some clinicians seem to avoid coming to grips with hyperlipidemia because of the apparent complexities of case finding, classification, and subsequent observation. Actually, the recommended procedure can be distilled to a few simple ingredients:

1. Decide on "satisfactory" levels of cholesterol and triglycerides.
2. Identify hyperlipidemic individuals by screening blood samples of adults (to age 60-65) and children of affected families.
3. Obtain a baseline average of at least three values before starting therapy.
4. Prescribe appropriate treatment for the individual lipid disorder. (See further comments, below).
5. Assess the results with periodic lipid determinations (monthly until a satisfactory level is maintained on a stable regimen, then at longer intervals). Such monitoring is essential to assure the patient's adherence (particularly to diet) and the success of the program.

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*Since the CDP began in 1966, three other therapeutic regimens have been discontinued because of serious cardiovascular complications and lack of positive benefit. The three discontinued regimens were, chronologically: conjugated equine estrogens 5.0 mg per day, d-thyroxine 6 mg per day, and conjugated equine estrogens 2.5 mg per day.

6. Try to achieve and sustain a satisfactory level if possible; if not, do your best to maintain lipids near a satisfactory level.

SELECTION OF APPROPRIATE THERAPY

First, be sure you haven't missed an occult condition to which hyperlipoproteinemia (HL) may be secondary. A thorough examination usually ferrets out the more common of these problems: occult hypothyroidism, liver disease, or diabetes mellitus. Lipid levels should respond to treatment of any such primary condition. Chronic alcoholism may be suggested by large, unexplained fluctuations in triglyceride levels. Such conditions as nephrosis, myeloma, and macroglobulinemia are usually apparent when the associated hyperlipidemia is discovered incidentally.

Having excluded secondary HL, classification of the primary disorder assists in rational selection of treatment. The Frederickson-Lees-Levy classification, which is familiar to this group of internists, offers a convenient short method of nomenclature.

Dietary treatment is appropriate *if* the patient follows it and *if* it lowers lipids satisfactorily. Diet is most likely to succeed in hypertriglyceridemia (Types III, IV, V) but is limited by the patient's long-term cooperation. Nearly all diet studies show mean cholesterol reductions of approximately 10%. Successful drugs reduce cholesterol levels by 15% to 25% in most series.

TABLE 3

Type of Hyperlipoproteinemia: Selection of Drugs

	II	II_B	III	IV	V
Cholestyramine	x	?			
Clofibrate		?	x	x	x
Nicotinic acid	x	x	x	x	x

To me, this therapeutic philosophy seems practical:

1. If body weight is excessive, prescribe a calorie-restricted diet, tailored to the HL type.[7] If lipids fail to reach and remain in a satisfactory range, lipid-lowering drug therapy can be prescribed.
2. If body weight is satisfactory, one may choose between dietary and pharmacologic therapy or may combine them.

If, in either of the above situations, diet is used alone, the patient should understand that his physician plans to follow the lipid response and will wait no longer than a few months to prescribe a lipid-reducing drug if diet fails. A patient who lacks this understanding may become disgruntled by the restricted diet, embarrassed by his failure to lose weight, and further discouraged if lipid levels also fail to budge. If he does not return for further visits, his physician loses the opportunity to treat hyperlipidemia effectively, to say nothing of other risk factors and any other medical problems.

TABLE 4

Characteristics of Recommended Lipid-Reducing Drugs

	Cholestyramine Resin	Clofibrate	Nicotinic Acid
Probable mechanism of action	Decreased lipid absorption	Decreased lipoprotein synthesis	Decreased lipoprotein synthesis
Usual dosage	4.0 gm q.i.d.	250 mg q.i.d.	1.0 gm t.i.d.
Monthly cost*	$34.30	$9.20	$5-8.50
Side Effects:			
a. Nuisance	Powder form Unpalatability Constipation Nausea	Nausea Diarrhea Myositis (rare)	Flushing (first week) Nausea Diarrhea
b. Potentially serious	Adsorbs: digitalis, thiazides, phenobarbital, thyroid, tetracyclines, warfarin	Potentiates anticoagulants Ventricular ectopic beats (rare)	Jaundice (rare)
c. Frequent, usually inconsequential	———	Increased hepatic enzymes in serum Granulocytopenia	Increased hepatic enzymes in serum Hyperglycemia Hyperuricemia Dry skin

*Retail priices at pharmacies in Phoenix (October 1974)

There is much to be said for using an effective lipid-lowering agent from the start, combined with caloric restriction if weight is excessive. The situation is analogous to treatment of an obese hypertensive individual, in whom one would not withhold an effective antihypertensive agent while waiting to see whether weight reduction, which may or may not occur, will result in normal blood pressure.

SELECTION OF LIPID-LOWERING DRUGS

Three currently available lipid-reducing agents deserve consideration: cholestyramine resin, clofibrate, and nicotinic acid. *Table 3* summarizes their efficacy in the several drug-responsive HL types (omitting Type I, the rare familial defect treated only by diet). *Table 4* compares their other characteristics.

A fourth drug, d-thyroxine, is also effective (in Type II HL) but has been omitted. In my judgment it should be eliminated from consideration for clinical use, on the basis of CDP findings.[8] Patients receiving this drug had an 18% higher proportion of deaths than the CDP placebo group, a higher death rate from coronary and all cardiovascular causes, and more recurrent nonfatal heart attacks as well. The group also experienced more angina, congestive failure, and arrhythmias. D-thyroxine has never been approved or recommended for use in persons with known coronary disease. The prevalence of occult, severe coronary atherosclerosis (no prior symptoms in more than 50% of first heart attacks) should interdict its use in any hyperlipidemic individuals.

Space does not permit a detailed commentary on the relative merits of these drugs, which can be found in a recent publication.[9] Assuming proper HL classification and selection of drugs, my experience has shown these three agents to be about equally effective in reducing lipids. As *Table 4* indicates, there are no "trouble-free" drugs; however, in comparing side effects it is useful to distinguish potentially serious effects from those with only nuisance value and others which, although frequent, are usually inconsequential. Long-term expense also deserves consideration.

If one drug, alone or combined with dietary alteration, fails to reduce lipids sufficiently, addition of a second agent seems reasonable. Combinations of drugs may achieve desired results with lower doses of each agent, thus minimizing side effects in a manner similar to present-day antihypertensive therapy.

SUMMARY

Death or disability from heart attack, stroke, and other atherosclerotic disease often occur without prior warning symptoms. To reduce their devastating toll, more emphasis must be placed on preventive measures.

Major risk factors should be assessed and any which are unfavorable should be treated, even if conclusive proof of benefit may be lacking in some instances. Most significant among these factors are: *hypertension, hyperlipidemia, cigarette smoking, obesity, diabetes,* and *lack of physical exercise.*

Treatment of *hyperlipidemia* appears to lessen the risk of heart attack, judging from dietary studies. Properly selected drugs lower serum lipids more effectively than diet; thus pharmacologic therapy or combined diet-drug therapy may further improve morbidity and mortality. However, current long-term studies of lipid-lowering drugs will *not* delineate their value in primary prevention within the next decade; therefore, decisions regarding their use must still be based on available evidence and clinical judgment, without awaiting ultimate proof of efficacy.

Adequate dietary alteration may reduce serum lipids but frequently proves unacceptable to the patient or ineffective. Choices among the three safe and effective drugs currently available (cholestyramine, clofibrate, and nicotinic acid) should be based on multiple considerations, including efficacy in the several types of hyperlipoproteinemia, relative freedom from serious adverse effects, and expense to the patient.

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RESPIRATORY DISORDERS IN TUCSON: PRELIMINARY OBSERVATIONS

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Although obstructive lung diseases are among the most common medical problems in the nation today, a great deal is still unknown about their early natural histories, their causes, their early detection, or their prevention. While it is generally accepted that smoking is an important factor in the development of emphysema and chronic bronchitis, we do not know why only a minority of smokers develop these disorders. Many other problems are also unresolved. For example, why are some respiratory allergies manifested only as rhinitis, others only as asthma, and still others as both? Why cannot allergy skin test reactions be demonstrated in all subjects with these conditions? What is the relationship of allergic asthma to chronic airways obstructive diseases?

With the aim of clarifying these and other aspects of obstructive lung diseases, we have undertaken a long-term epidemiological study in the Tucson area. To minimize the opportunities for bias in the project and to provide an appropriate study group, nearly 3,000 households were randomly selected in a manner which assured inclusion of a broad distribution of age and socio-economic levels. Some of these households proved vacant and others contained non-permanent residents. Also, approximately 18% refused to participate in the study. The final sample of permanent residents included approximately 3,850 individuals in some 1,655 households. All age groups are well represented and the sexes rather evenly divided. Since insufficient numbers of Mexican-Americans were enrolled to permit valid comparisons, this preliminary report deals only with 3,484 persons in the Anglo-white sample. It is also limited to data collected in the first year of the study.

Extensive questionnaires were completed by virtually all participants. Of those over five years of age, satisfactory flow volume curves were obtained on 96% and blood samples on 94%. Allergy skin testing was performed on 95% of those over three years of age.

PREVALENCE OF DIAGNOSED RESPIRATORY DISEASES

Many chronic diseases are found to be more prevalent in Tucson than in the United States as a whole,[1] as shown in Table 1. With Arizona's long-standing reputation as the place to go for lung disease and arthritis, this is not unexpected. What is surprising, however, is that even Tucson natives have higher than national rates for asthma, chronic bronchitis, emphysema, and especially for hay fever. Thus, only a part of Tucson's high rates can be explained by persons moving into the area for health reasons, and only in the

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From: The St. Lukes-in-the-Desert Chest Diseases Center and the Westend Research Laboratories.

Supported by a Specialized Center of Research Grant from the National Heart and Lung Institute, No. HL14136.

Reprint request to: James O. Morse, M.D., V.A. Hospital, Tucson, Arizona 85723.

TABLE 1
PREVALENCE OF DISEASE

Prevalence of Respiratory Diseases in Tucson
(age and sex corrected rates, per 100 subjects)

	Reported for U.S.A.	Tucson overall	Tucson natives	Percent of excess explained by move-in[*]
Emphysema	0.7	3.6	1.4	70%
Chronic bronchitis	3.4	6.6	5.1	40%
Asthma	3.0	6.5	5.6	50%
Allergic rhinitis without asthma	5.6	37.8	41.1	10%

[*] Per cent of excess rate in Tucson compared with U.S.A. explained by subjects moving here for health reasons.

case of emphysema does in-migration account for most of this increase. More detailed analyses of migration factors show that high rates among migrants to the area are explained almost completely by those who move here specifically for health reasons. Other migrants have disease rates similar to national averages, except in the case of allergic rhinitis. This condition is very common in all groups, regardless of migration status.[2]

These higher prevalences of respiratory disorders in Tucson cannot be explained by smoking habits or socio-economic status, smoking rates being similar to those found in other surveys elsewhere in the country. If anything, Tucsonans smoke a bit less.

These findings raise questions concerning the possibility of local adverse environmental factors or the presence of a genetically susceptible population. It seems doubtful that diagnostic habits of physicians in Tucson are different enough from those in the rest of the country to explain the observations.

ALLERGY SKIN TESTS, ALLERGIC RHINITIS, ASTHMA, AND WHEEZING

High rates of allergy skin test reactions are noted, and as shown in Table 2, these are more frequent in young to middle aged adults than in children or older subjects. There is a close correlation of skin test reactivity with non-infectious rhinitis and with asthma. The relationship of skin test reactivity to these and several other conditions is shown in Table 3. It is of interest only about one-quarter of subjects who complained of some type of wheezing had a known diagnosis of asthma. Among adults, all types of wheezing showed some relationship to skin test reactivity. Chronic wheezing without attacks of shortness of breath was closely related to cigarette smoking in addition to showing a relationship to allergy skin tests. If all subjects with wheezing or allergic rhinitis are eliminated, the remainder of the population show little skin test reactivity and among such subjects, those claiming food or drug allergies have no more skin test reactions than do normals.

In contrast with the situation in adults children who wheeze only with acute respiratory infections show no definite increase in skin test reactivity. The significance of this condition, which occurs in approximately 25% of young children, remains unclear.

TABLE 2
ALLERGY SKIN TEST REACTIVITY BY AGE
(Prick tests with multiple allergens)

Per cent with moderate sized reactions	Age
9.5	3- 5
14.0	6-14
27.8	15-29
25.1	30-44
17.3	45-59
9.8	60-74
8.0	75+

CIGARETTE SMOKING, CHRONIC COUGH, AND VENTILATORY IMPAIRMENT

As reported in many other studies, cigarette smoking shows a close relationship to cough and sputum production, to impairment of ventilatory function, and to diagnoses of chronic bronchitis

TABLE 3
ALLERGY SKIN REACTIONS
IN SEVERAL CONDITIONS

	Per cent with moderate sized reactions
Attacks of shortness of breath with wheezing:	
Diagnosed as "asthma"	42%
Not diagnosed as "asthma"	25%
Other wheezing:	
Even without respiratory infections	24%
Only with respiratory infections	18%
No wheezing:	
Allergic rhinitis	26%
No wheezing or allergic rhinitis:	
Food or drug allergy	3%
Other disease	6%
"Normal" (remainder)	6%

TABLE 4
SMOKING RELATIONSHIPS

	Cigarette Smoking				
		Present smoker			
	Never smoked	1-9/day	10-20/day	21+/day	Ex-smoker
Males: %with worst grade of chronic productive cough	2.9	2.4	16.0	26.6	11.4
% with spirometric abn. ($FEV_1/FVC < 65\%$)	4.3	8.3	15.0	13.3	20.4
Females: % with worst grade of chronic productive cough	3.2	4.5	13.6	28.8	5.6
% with spirometric abn. ($FEV_1/FVC < 65\%$)	4.5	6.6	6.5	13.7	5.8

and emphysema. Among cigarette smokers, chronic cough becomes more frequent with advancing age, which may only reflect the length of time smoked. Some degree of cough is almost the rule among older heavy smokers. Chronic productive cough is relatively infrequent among those who have never smoked, particularly if one excludes subjects with a history of respiratory troubles during childhood. Such individuals may have decided not to smoke because of pre-existing respiratory symptoms.

Data in male present smokers, never smokers, and ex-smokers are of interest. As seen in Table 4, there is a high prevalance of ventilatory impairment in male ex-smokers, suggesting that this was the reason they stopped. In fact, 65% of male ex-smokers admitted stopping due to symptoms. Women, on the other hand, show a low rate of ventilatory dysfunction in ex-smokers; apparently they either have greater reversibility in lung function abnormality or else stop smoking for other reasons. Only about one-third of female ex-smokers stopped due to symptoms. Productive cough is more clearly related to current smoking habits than is ventilatory impairment. Indeed, considerable variability in ventilatory tests remains even after accounting for smoking habits and childhood illnesses.

Some qualitative differences in the pattern of cough and sputum are noted between Tucson and other locales where similar studies have been carried out. In this area, "simple chronic bronchitis" associated with smoking is less clearly seasonal and more often characterized by a non-productive cough. Less than 25% of our coughing population noted any seasonal variation. No particular months were selected as amongst their worst by more than 14%. In addition, cough and sputum production were less clearly an early morning event than in some other locales. Taking these differences into account, the overall prevalence rates of cough and sputum production are not significantly different in Tucson than in some other locales which are generally considered to have a much less salubrious climate.

Alcoholic consumption is also related to smoking, but it is not related to symptoms or reported diagnoses when smoking and other factors are taken into account Smoking habits are also directly related to education and income, but these latter do not in any way affect the relationship of smoking to disease

GENETIC FACTORS AND ALPHA$_1$-ANTITRYPSIN DEFICIENCY

Serum levels of alpha$_1$-antitrypsin are not related to any symptoms, findings, or diagnosed disease. Ventilatory function deteriorates at the same rate with age in the group with intermediate levels of alpha$_1$-antitrypsin deficiency (measured as trypsin inhibitory capacity) as in the group with normal levels. (Details of these studies have been published elsewhere.[3]) Preliminary analyses reveal no striking familial tendency toward chronic airways obstructive diseases, but these analyses are still in progress.

SUMMARY

This report is intended only as a brief overview of initial findings in what is planned to be a very long-term study. Hopefully, detailed longitudinal observations will allow a better determination of the significance of genetic factors, allergic predisposition, smoking, and other factors in the development of chronic respiratory diseases and point the way toward more reliable early detection of these conditions.

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PUBLIC LAW 93-641

National Health Planning and Resources Development Act of 1974

The Board of Directors and the Governmental Service Committee of the Arizona Medical Association were convened on March 2, 1975, by William G. Payne, M.D., President of the Association, because of the relatively sudden enactment of the 93rd Congress of a far-reaching policy that will materially affect every patient in the land. Readers of *Arizona Medicine* are urged to read this act. A summary of its contents has been prepared by the Legislative Department of the American Medical Association and is published in this issue of journal. Indicating the urgency of the situation, Governor Raul H. Castro, like the other 49 governors of the United States, has been given a time table to follow in the area of designation process and this time table is also reprinted in this issue along with the letter of transmittal to the Arizona Medical Association by William D. Mack, Deputy Director of the Arizona Department of Health Services, Division of Planning and Resources.

Constitutional issues have been raised by this Act and may be the basis for an injunction, but this is yet to be determined. These fundamental issues are well covered in an opinion by Betty Jane Anderson, Director of the Health Law Department of the American Medical Association and her opinion is reprinted in the form of a letter to the Arizona Medical Association; also in this issue.

The Board of Directors of the Arizona Medical Association have a monumental task and obligation in representing the best interests of the patients we treat and the medical profession. Your Editor is sincerely concerned about this strong move toward socialized and populist medicine and local rule. A better solution is needed.

John R. Green, M.D.

Editor's Page

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SUMMARY OF THE NATIONAL HEALTH PLANNING AND RESOURCES DEVELOPMENT ACT OF 1974

by the Legislative Department of the American Medical Association

General

The Act which has been signed by the President contains two new Titles to the Public Health Service Act. Title XV is entitled National Health Planning and Development, composed of four parts, and Title XVI, Health Resources Development, composed of six parts. The law as a whole is referred to as the National Health Planning and Resources Development Act of 1974.

I. NATIONAL HEALTH PLANNING AND DEVELOPMENT

The planning title establishes a mechanism strongly controlled and regulated by the Secretary of Health, Education, and Welfare through a five-tier system composed of 1) the Secretary, 2) the National Council on Health Planning and Development, 3) the State Agency, 4) Statewide Health Coordinating Council, and 5) Health Systems Agency. The law would regulate new health facilities services and would establish up to 6 projects for state rate regulation.

National Guidelines, Priorities, and Health Planning

The law first would require the Secretary of Health, Education, and Welfare (hereafter, Sectary) to issue through regulations national guidelines concerning health planning policy, which may be issued as the Secretary deems necessary. The guidelines would include standards for the "appropriate supply, distribution, and organization of health resources," and a statement of national health planning goals expressed in quantitative terms. The Secretary is to consult with all local and state planning agencies in developing his guidelines. However, Congress has in this Act predetermined certain national health priorities which are deemed to be deserving of priority consideration in national health planning goals and in development of federal, state, and area health planning and resources development programs. These priorities include development of multi-institutional systems for coordination or consolidation of institutional health services, provision of primary care especially to rural and economically depressed areas, development of medical group practices, utilization of physician assistants, development of multi-institutional arrangements for sharing of support services, promotion of facilities to achieve needed improvements in the quality of health services, development by institutions to provide various levels of care on a geographic basis, preventive health care services, uniform cost accounting and development of methods for educating the general public concerning proper personal health care.

The law would also establish a National Council on Health Planning and Development. This Council would be composed of 15 members (3 ex officio, and the balance appointed by the Secretary), of which at least 5 would be consumers, at least 3 would be members of governing bodies of health systems agencies (HSA's), and at least 3 would be members of Statewide Health Coordinating Councils (SHCC's). The Council would be responsible to advise, consult with, and recommend to, the Secretary in his development of national guidelines and in his implementation and administration of this law.

Health Systems Agencies

The Act would provide for establishment of health systems areas throughout the United States. The areas would generally be based on minimum/maximum population limits with certain exceptions, would be a "geographic region appropriate for the effective planning and development of health services," and would include, if possible, at least one center for the provision of highly specialized health services. The boundaries of the areas would be those established by the Governor of the State, provided that the Governor makes a determination following the criteria established by the Secretary and responding within the time limits effective when the Secretary requests the Governor to submit boundary designations. Should the

Governor fail to respond, or should the Secretary determine that the boundaries as proposed do not meet the requirements, the Secretary shall establish the boundaries of the area. The Secretary would be required to review periodically, or upon request, the boundaries of the areas.

For each area an HSA would be established, provided it is capable of performing its function as determined by the Secretary. The HSA would be either a private non-profit corporation or a public body, with an independent governing board composed of a majority (but not greater than 60%) of consumers, and which would have at least one-third of its members who are direct providers of health care. An HSA would be required to have a minimum professional staff. The HSA would be responsible for establishing and reviewing annually the health systems plan (HSP) and in establishing an annual implementation plan (AIP), for approving grants to all applicants for funds from the Area Health Services Development Fund, to approve or disapprove applicants for funds under Mental Health Centers Act, and under the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970 and to approve or disapprove, within its area, requests for funds from the State provided to the State as an allotment under the Public Health Services Act. The Secretary would have the authority to reverse an adverse decision. The HSA would also review and recommend to the State the need for proposed new institutional health services, would review all institutional health services at least every 5 years and recommend to the State the appropriateness of the services and would annually recommend to the State projects and priorities for modernation, construction, and conversion of medical facilities.

The Secretary would have authority to provide technical assistance to encourage organizations to develop into HSA's. The Secretary would also contract with the HSA on an annual basis to provide planning grants provided it met criteria as established by the Secretary. Grants would be on a capitation basis but would be renewed only after determination by the Secretary that the HSA had fulfilled its functions in a manner satisfactory to the Secretary.

State Health Planning and Development

The Secretary would be empowered to enter into contracts with the State to perform the health planning functions through a State Agency. However, any State having a contract would have an administrative program approved by the Secretary, would establish a Statewide Health Coordinating Council (SHCC) and would not have its agreement renewed by the Secretary if it fails to perform its functions to the satisfaction of the Secretary. In addition, the Secretary would not allot any federal funds under the Public Health Services Act, the Community Mental Health Centers Act or the Comprehensive Alcohol Abuse Act of 1970 for health resources support if an agreement between him and a State was not in effect within the 4th fiscal year after the calendar year of the enactment of this law.

The Secretary could not approve a state administrative program unless it met criteria promulgated by the Secretary relating to qualifications of personnel, methods of administration, evaluation standards for performance, and project review standards.

The State Agency would conduct the Health planning activities of the State. It would annually review and revise the HSP's in preparing a preliminary State plan, would assist the SHCC, would serve as the agency for Sec. 1122 review under the Social Security Act, would administer a State certificate of need program applicable to new institutional health services and satisfactory to the Secretary, and make findings as to the need for new institutional health services.

The SHCC would consist of at least 16 members, composed of at least two representatives from each HSA. The Governor would in addition be able to appoint 40% of the total membership of the SHCC. A majority of the members would be consumers; at least one-third could be direct providers. The SHCC would prepare, review, and revise at least annually the State plan composed of the HSP's, would revise HSP's, would review the annual budget of each HSA, and would review grant requests made by the HSA and the State.

The Secretary would also be given authority to enter into agreements with not more than 6 State Agencies which wish to carry out rate regulation of the provision of health care. Any State Agency would meet the criteria as established by the Secretary, would indicate to the Secretary (no later than 6 months from enactment of this law) its intent to regulate rates and would demonstrate the necessary authority for such regulation under State law.

General Provisions

The law would define "provider of health care" as an individual

> "(A) who is a direct provider of health care (including a physician, dentist, nurse, podiatrist, or physician assistant) in that the individual's primary current activity is the provision of health care to individuals or the administration of facilities or institutions (including hospitals, long-term care facilities, and health maintenance organizations) in which such care is provided and, when required by State law, the individual has received professional training in the provision of such care or in such administration and is licensed or certified for such provision or administration; or (B) who is an indirect provider of health care in that the individual — (i) holds a fiduciary position with, or has a fiduciary interest in, any entity described in subclause (II) or (IV) of clause (ii); (ii) receives (either directly or through his spouse) more than one-tenth of his gross annual income from any one or combination of the following: (I) Fees or other compensation for research into or instruction in the provision of health care. (II) Entities engaged in the provision of health care or in such research or instruction. (III) Producing or supplying drugs or other articles for individuals or entities for use in the provision of or in research into or instruction in the provision of health care. (IV) Entities engaged in producing drugs or such other articles. (iii) is a member of the immediate family of an individual described in subparagraph (A) or in clause (i), (ii), or (v) of subparagraph (B); or (iv) is engaged in issuing any policy or contract of individual or group health insurance or hospital or medical service benefits."

The law would define health resources as meaning health services, health professions personnel, and health facilities.

Institutional health services would mean health services provided through health care facilities and HMO's as such are defined by the Secretary through regulations promulgated under Sec. 1122 of the Social Security Act and includes the entities through which the services are provided.

The Act also would establish minimum review criteria, to be developed by agencies pursuant to regulations published by the Secretary.

The Secretary would also develop planning methodology and technology to assist State and area agencies in their own planning and would provide for the setting up of minimum data needed for planning. In particular, the Secretary would establish, within 1 year, a uniform system for calculating cost, a uniform system for cost accounting, a uniform system for calculating rates, and a classification system for health services institutions of costs and rates. The Secretary would also establish up to 5 centers for health planning development.

The Secretary would also review and approve or disapprove annually the budget of each HSA and State Agency, would prescribe performance standards of each, and would review at least every three years the structure, function, performance, plans, personnel, and accomplishments of each.

Health Resources Development

The law would replace the present Hill-Burton Program. The purpose of the law would be to modernize medical facilities, to construct new outpatient medical facilities, to construct new inpatient medical facilities in areas of rapid population growth, and to convert existing medical facilities.

The Secretary would establish regulations prescribing the manner in which the State Agency would determine priority among projects (with emphasis on rural and urban poverty areas, outpatient and preventive care, and densely populated areas), would set criteria for modernization need determination, and would provide adequate medical facility services to everyone in the State and to those unable to pay.

The State plan would be developed through the State Agency and the Statewide Health Cooridinating Council, would be approved by the Secretary and would establish priorities among identified needs. An application would be reviewed and approved by the State Agency. The Secretary could reverse an adverse decision toward an applicant.

Amounts available from federal funds would be allocated either directly to the State which would then determine and make project grants, or in the form of loan guarantees allocated in amounts by State. There is provision for the withholding of grant amounts from a state which

AREA DESIGNATION PROCESS

	Planned Completion
1. Secretary of DHEW Notifies by Letter Governor of Initiation of Process	Completed
2. Governor Notifies Regional Director of His Liaison Representative	February 5
3. DHEW Meeting with Governor's Representative	February 15
4. DHEW/State Meetings with Community Organizations	February 15
5. Governor's Consultation with:	March 31
a. Political Subdivisions	
b. Department of Health Services (Sec. 314(a) (Agency)	
c. Areawide Health Planning Councils	
d. Regional Medical Program	
e. Other Appropriate Organizations and Groups	
6. Completion of Draft Area Designations	April 11
7. Review and Approval of Area Designations by Governor	April 25
8. Submittal of Area Designations to DHEW Regional Director	April 31
9. Review, Discussion, and Approval by Secretary	July 15
10. Publication by Secretary of Area Designations in Federal Register	August 1

fails to maintain compliance with its program in the determination of the Secretary.

Not more than 20% annually of the funds may be obligated for new facilities for inpatient treatment in areas of the State experiencing rapid population growth and not less than 25% annually may be obligated for outpatient facilities serving medically underserved populations.

The Act would also establish Area Health Services Development Funds, to be administered by the HSA's to contract with entities to plan and develop projects which the HSA deems necessary for achievement of its HSP. The fund amount could not exceed a **per capita** determination.

February 20, 1975

Mr. Bruce Robinson
Executive Director
Arizona Medical Association
810 West Bethany Home Road
Phoenix, Arizona 85013

RE: National Health Planning and Resources Development Act of 1974 (P.L. 93-641)

Dear Mr. Robinson

It is my understanding that your organization may be interested in proposing an area for designation by Governor Castro as a Health Systems Area under Section 1511 of the above Act.

The Governor has appointed me as his representative to coordinate the preparation and review of proposed area designations. Accordingly, I enclose for your consideration and use, if you so desire, a format to be used in proposing one or more areas for such designation.

In order to meet the deadlines imposed by the Act itself and to allow for necessary review and coordination within the State, any proposal you wish to make should be sent to me in five copies (including exhibits) by March 24, 1975. All proposals must be prepared in accordance with the DHEW Guidelines for Designation Health Services Areas.

Our Department will be glad to assist you in preparing your proposal or in arranging discussions with other groups. If you have any questions or wish to discuss this matter further please do not hesitate to call me at 271-3400.

Very truly yours,
William D. Mack
Deputy Director
Arizona Dept. of Health Resources

February 21, 1975

Mr. Bruce E. Robinson
Executive Director
Arizona Medical Association
810 West Bethany Road
Phoenix, Arizona 85013

Dear Mr. Robinson:

This is in reply to your telephone request for a brief summary of the Constitutional issues that may be raised by the National Health Planning and Resources Development Act of 1974.

1. An argument can be raised that the Act is unconstitutional in that Congressional power has been delegated to the Secretary of Health, Education and Welfare without standards to govern the exercise of that power. The Act would authorize the executive branch to regulate the entire medical care delivery system in the United States with minimal regulatory standards supplied by Congress. For example, Section 1501(b) (1) provides that the guidelines issued by the Secretary of HEW under the Act shall be "standards respecting the appropriate supply, distribution, and organization of health resources." The lack of standards in this delegation could permit the Secretary of HEW to limit the number of hospitals in a community, the number of critical devices available in an area, and the ability of a physician to practice where he or she chose.

2. An argument can be raised that the Act is unconstitutional insofar as it delegates governmental authority to private entities. Under Section 1512(b) (1), a "Health Systems Agency" can be a private corporation and the Act gives substantial powers to such Agencies. There is case precedent to support the argument that in the absence of final government approval, delegation to a private entity of the power to implement, plan and disburse government funds is constitutionally impermissible.

3. An argument can be raised that the Act is unconstitutional in that it requires the States to participate in the regulation of a national problem; namely, health care delivery. The Act deprives the states of their right to choose what areas to regulate and hinders their ability to regulate problems purely local in nature in violation of the Tenth Amendment.

4. An argument can be raised that the Act is unconstitutional insofar as it creates a governmental entity which does not conform to the federal-state division of power contemplated in the Constitution. For example, Section 1511(a) establishes health service areas, the boundaries of which are to be determined by taking into account economic and geographical barriers. From the language used, it appears that a health service area might be smaller than a state, coextensive with the boundaries of a state, made up of more than one state, or made up of portions of different states. Each area will be under the jurisdiction of a Health Systems Agency with considerable power independent of the states.

5. An argument might be raised that the Act is unconstitutional insofar as it abrogates the state law of tort. Section 1512(b) (4) in essence declares that no employee of a Health Systems Agency shall be liable for payment of any damages if he or she has acted in a reasonable manner and within the scope of employment. This provision might be attacked on the grounds that Congress may not constitutionally declare what is or is not a tort under state law or that the power to strike down state law rests with the judiciary and the section therefore violates the doctrine of separation of powers guaranteed by the Constitution.

6. An argument might be raised that the Act is unconstitutional insofar as it gives government agencies free access to confidential medical records. Section 1513(b) (1) (A) requires the Health Systems Agency to assemble and analyze data concerning "the status (and its determinants) of the health of the residents of its health service area." Section 1532(b) (3) requires persons subject to the review of the State Agency to submit such information as the Agency may require. There are no provisions to assure that patients' privacy will not be violated.

7. An argument might be raised that the Act is unconstitutionally vague. Undefined terms are used and the Secretary of HEW is offered various choices with no indication of how the choices should be made. Examples of the vagueness argument are furnished by the language in a number of the Sections of the Act. One of the purposes of the Act is to prevent "unnecessary" duplication of health resources, but there is no indication as to what or whose standards will be used to judge necessity. The Act provides no guidance as to how the choice between competing applicants for designation as Health Systems Agencies will be made. The Act provides no guidance as to what factors will be used in the Secretary's determination of the six states which may receive grants to test "the effectiveness of rate regulation."

As you can appreciate, this summary is based upon a preliminary legal research effort only.

Sincerely,
bj Anderson
(Miss) Betty Jane Annderson
Director, Health Law Department
American Medical Association

Dean's Page

PREPARATION FOR CLINICAL MEDICINE AT THE UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE

NEAL A. VANSELOW, M.D.

When the College of Medicine changed from the traditional four-year curriculum to a program making it possible to achieve the M.D. degree in somewhat less than 36 months, it also became possible to design a coordinated course which would better prepare students for entry into the clinical years. This course, Preparation for Clinical Medicine (PCM), was instituted in 1972 for the first entering three-year class. Although modified each year since, the basic four-part course remains intact.

From the onset, PCM has been an interdepartmental effort directed by a salaried faculty coordinator recruited specifically for the course. In concert with a committee selected by the Curriculum Committee, Anthony Vuturo, M.D., Assistant Professor of Family and Community Medicine, the first coordinator, designed an experience which begins virtually upon admission into Medical School. Robert I. Cutts, M.D., Assistant Professor of Psychiatry, has continued the same format since becoming coordinator for the 1974-75 academic year.

Initial activities are closely related to presentations in Gross Anatomy during a nine-week period which emphasizes performing techniques of physical examination. Topic introduction occurs through a series of lectures and demonstrations by various clinical departments. Preceptors are drawn both from faculty on the college campus and from the community. This early exposure to the clinical skills of physical examination meets with enthusiastic student approval. These exercises are followed immediately by a week-end course in the training given to Emergency Technicians for all students requesting it. About one-half of each class chooses the option.

A period of seminars and other offerings are provided beginning at about week sixteen of the curriculum. These provide an opportunity for special interest groups and electives such as "Medical Jurisprudence," "Nutrition," "Doctor-Patient Relationship."

Part II of PCM presents the issues of Health Care Delivery with exploration of various Health Care Delivery Systems, team medicine and demonstrations in Comprehensive Care Rounds. This nine-week experience is directed by the Department of Family and Community Medicine.

General medical interviewing occupies the sixteen-week Part III. Beginning with a series of lectures and demonstrations in interviewing techniques, the experience finishes with a series of lectures and demonstrations on the data base, patient assessment and the problem oriented record. Between these presentations are nine weeks with community and campus faculty preceptors.

Part IV, or Interphase, is offered during the four weeks between the basic science presentations of the Phase I curriculum and the clinical science experiences of Phase II — the first clerkship assignments. During this period the emphasis is on practical experience directed to learning 1) problem solving, 2) data base collection, 3) a patient assessment and 4) problem oriented record development. Providing resource for these clinical bedside efforts are lectures, seminars and colloquia on the approach to diagnosis in the various organ systems of the body.

Included with Parts II and III of the course are two sixteen-hour didactic presentations, one one psychopathology by the Department of Psychiatry and the other on epidemiology implemented by the Department of Family and Community Medicine with participation from the Arizona State Department of Health. The content of these sections of the course prepare students for entry into the clinical science of psychiatry and provide a base for understanding disease in society and the interpretation of medical literature.

The progress of students through the 13-15 months of PCM is monitored with bedside evaluations by preceptors and several written examinations, using both problem solving and cognitive questions. Student critiques of the various exercises are used to modify and improve the teaching methodology from year to year. After three years of experience with this approach, it is clear that the course is as named, an excellent Preparation for Clinical Medicine.

Neal A. Vanselow

Obstetrics and Gynecology

ENDOCRINE ASSAYS IN OBSTETRICS AND GYNECOLOGY – Part I

M. WAYNE HEINE, M.D.

INTRODUCTION

Endocrine functions were assessed in the past by evaluating urinary metabolites through colormetric or bioassay techniques. Either incomplete collections of urine or interferring substances often led to inaccurate values on urinary endocrine tests. Bioassay techniques are time consuming, expensive and have lmited sensitivity. With the introduction of saturation analysis techniques, small amounts of hormones can be measured with reasonable specificity and cost. Although many procedures are available only in endocrine specialty laboratories, some are now available in general laboratories. It is imperative that the physician become familiar with the range of normal values for the particular laboratory used, as each laboratory will have modifications of technique with a different range of normal values.

GONADOTROPHINS

The development of saturation analysis technique, especially radioimmunoassay has allowed the measurement of the gonadotrophins, follicular stimulating hormone, FSH, and luteinizing hormone, LH, from small amounts of serum with excellent sensitivity, ease and cost. These sensitive assays have led to a much better understanding of the normal and abnormal menstrual cycle. In the evaluation of the patient with menstrual irregularity, particularly those with primary or secondary amenorrhea, serum FSH and LH levels are particularly useful. If the serum levels of FSH and LH are below the normal range for the particular laboratory used, it suggests a hypothalmic or pituitary failure. This may be the result of a congenital defect or a possible hypothalmic or pituitary tumor. If the gonadotrophins values are elevated, particularly FSH, it indicates ovarian failure. This may confirm the diagnosis of ovarian dysgensis or premature ovarian failure. The majority of cases seen and evaluated by the obstetrician and gynecologist are those with menstrual irregularity. A useful test is to give the patient 50 to 100 mgs. of Progesterone in oil I.M. or 10 mgs. of medroxyprogesterone every day for five days and see if the patient has subsequent uterine bleeding. If the patient

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From: Arizona Medical Center, 1501 N. Campbell Ave., Tucson, AZ. 85724, (Dr. Heine).

should have withdrawal bleeding, this will usually indicate normal values for serum FSH and LH. If the patient has an associated problem of increased skin oil, hirsutism, and/or virilizations, LH values are particularly helpful. LH is usually slightly elevated in polycystic ovarian disease. If LH is depressed it suggests an adrenal source of the androgen. Ovarian androgen producing tumors are usually associated with elevated testosterone levels with a depression of LH.

Another group of patients in which the serum FSH and LH values are useful are patients with precocious sexual development. If the levels of serum FSH and LH are low or absent it suggests a hormonally functioning gonadal tumor. If the values fall within the normal adult range, then an idiopathic etiology or hypothalamic pituitary tumor may be the cause.

It is important to remember that psychotropic drugs and exogenous steroids may depress gonadotrophins.

Human chorionic gonadotrophin, HCG, has been measured by various bioassays for over forty years. In the 1960's an antibody to human chorionie gonadotrophin was developed. It was found that antibody could be used for a complement fixation test to determine the presence or absence of trophloblastic tissue. This allowed the development of rapid pregnancy screening slide tests which have been useful both in the clinical laboratory and the physician's office. The majority of tests have a sensitivity range of 1,000 to 2,000 international units per liter of urine. Interfering factors may limit the accuracy of the various pregnancy tests. Proteinuria may occasionally give a false-positive pregnancy test. Psychotropic drugs such as phenothiazines, antidepressants and anticonvulsion agents may interfere with the antibody reactions and give a false negative reading. It is important to be aware of any medications that patient is taking when the test is obtained.

Because of the limited senstivity of the screening slide tests for HCG, these tests are not useful in following the patients with trophoblastic tumors. Approximately 25 percentage of patients with persistent trophoblastic disease may have a negative screening pregnancy test. It is therefore imperative to use the more sensitive serum radioimmunoassay technique. These are now available in most areas of the country.

One should remember that approximately 40 to 50% of patients with an ectopic pregnancy will also have a negative slide test for pregnancy.

HUMAN PLACENTAL LACTOGEN

Human placental lactogen, H.P.L., is a polypeptide hormone produced by the syncytiotropholast of the placenta. The function of H.P.L. has not been entirely elucidated. We do know it has growth hormone-like activity and therefore is lactogenic, mamotrophic and diabetogenic. H.P.L. may be detected as early as the fifth week of gestation and levels continue to rise until reaching a plateau during the 34th week of pregnancy. Since H. P.L. is produced by the placenta, it is useful in certain disease conditions which effect placental function such as chronic hypertension and/or pre-eclampsia. H.P.L. does not, however, necessarily indicate fetal well-being and we have not found it to be as useful as the serum or urinary estriol as a prognosticator of fetal well-being. It can be assayed fairly inexpensively and accurately by radioimmunoassay. Serum estriol is a more accurate indicator of fetal distress and the cost is essentially the same. We therefore feel that estriols are more useful in following high risk pregnancies.

PROLACTIN

Prolactin is a polypeptide hormone whose presence as a separate hormone in humans has been identfied within the past five years. Prolactin has some 80 biological functions which range from reproduction to osmoregulation. During pregnancy prolactin level rises progressively until full term. Prolactin levels are usually depressed in post-partum pituitary necrosis, Sheehans Syndrome. They are elevated in syndromes associated with abnormal lactation or galactorrhea. Since many cases of glactorrhea may be associated with a hypothalamic or pituitary tumor, we are now evaluating the prolactin water-loading test. This test may help us differentiate those cases which are functional and those associated with tumors. If a patient is given a large period of time, the prolactin levels will almost disappear in cases of functional galactorrhea. In cases of tumors, hydration will not affect the levels of prolactin. As more information becomes available on this test, it may prove a much better means of evaluating patients with amenorrhea and galactorrhea.

Part II will appear in the May issue of *Arizona Medicine.*

PROGRESS IN THE TREATMENT OF OSTEOGENIC SARCOMA

RICHARD C. LLOYD, M.D.

This new section in Arizona Medicine is specifically targeted to the subject of cancer care in the state of Arizona. Recognition of the importance of cancer management has been underscored by the establishment of the conquest of cancer as a national goal. In this column, current concepts in cancer management and recent advances in cancer research that are relevant to Arizona, will be discussed each month. Cancer therapy is currently changing at an extraordinarily rapid rate, and the views expressed on this page should not be considered as static recommendations. The editors of this column will select key topics and invite interested physicians and allied health professionals from Arizona to write components related to areas of their expertise in cancer.

Editors: Sydney E. Salmon, M.D., Professor and Head, Section of Hematology and Oncology, University of Arizona College of Medicine, Tucson, Arizona 85724; Robert H. Thoeny, M.D., Dir., Radiation Oncology, Good Samaritan Hospital, Phoenix, Arizona 85006; Darwin W. Neubauer, M.D., General Surgeon, 720 Country Club Road, Tucson, 85716.

Osteogenic sarcoma is a rare, highly malignant, primary bone cancer which occurs most commonly between the ages of 10 and 20 years. Fifteen cases can be expected in Arizona in 1975. Presentation usually results from the appearance of a painful swelling of the distal femur, proximal tibia or proximal humerus. Presentation in the axial skeleton is more common in the osteogenic sarcoma complicating the course of Paget's disease. The primary mode of therapy is amputation when possible, usually of radical nature, but a disappointingly poor 5-year survival rate between 17% and 23% can be expected with surgery alone.[1, 2] Neither the type of surgical amputation nor the addition of preoperative radiotherapy has improved the survival rate.[3] Despite achieving local control of the primary lesion asymptomatic pulmonary metastases become apparent within 18 months of surgery in 80% of patients and herald the onset of a progressively downhill course. Most patients will die within 6 months of the detection of pulmonary disease. Exceptional patients will have prolonged survival following the resection of single or multiple pulmonary metastases; unfortunately, this is infrequent.[4]

The failure of local primary therapy results not from failure to achieve local control of the disease, but rather from the presence of subclinical foci of metastatic cancer (micrometastases) in the lungs at the time of diagnosis. It is unlikely that dislodgement of tumor cells during amputation is solely responsible for the subsequent appearance of pulmonary metastasis.[5] Potentially curative surgical therapy fails in over 80% of patients because the natural history of octeogenic sarcoma is characterized by early hematogenous dissemination and establishment of micrometastases in the lung.

Recognition of the importance of occult pulmonary micrometastases has resulted in the use of adjuvant chemotherapy in the primary treatment of osteogenic sarcoma. Following initial maximal reduction of the tumor cell burden by amputation, the growth characteristics of the remaining clinically undetectable micrometastic lesions are such that eradication of these foci by chemotherapy should be possible.[6, 7] Demonstration of significant response of advanced cancer of similar histology to chemotherapy has been the primary criterion by which suitable drugs have been selected for use in an adjuvant setting. However, even drugs which are ineffective against advanced tumor might have important activity against microfoci of tumor cells. At present it is preferable to use as adjuvant therapy only those agents having demonstrable activity in advanced disease. The use of active agents in combination is desirable to minimize potential problems of drug resistance.

There are now several drugs active for advanced metastatic osteogenic sarcoma. High doses of methotrexate followed by citrovorum factor has resulted in regression of pulmonary metastases in 8 of 10 patients.[8] Citrovorum fac-

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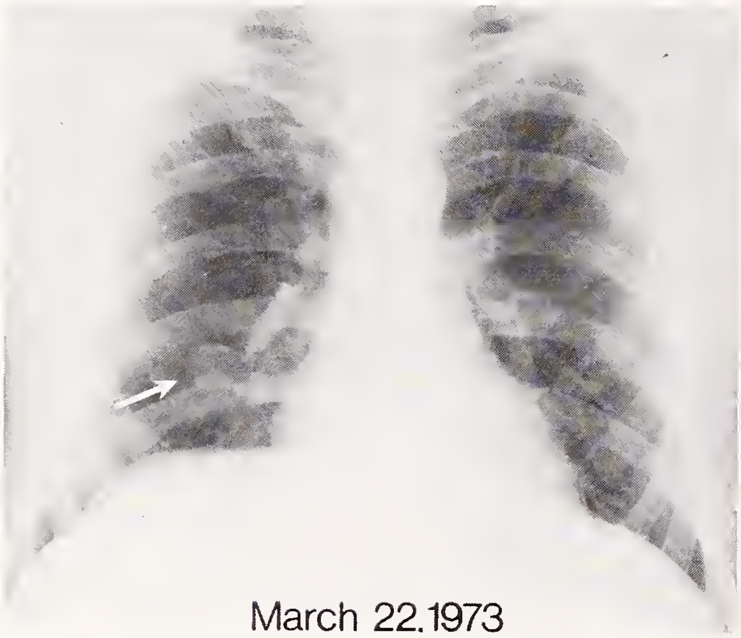
Section of Hematology and Ooncology, Arizona Medical Center, Tucson 85724 Dr. Lloyd is the recipient of a Medical Oncology Fellowship from the Arizona Division of the American Cancer Society.

tor bypasses the metabolic block in folate metabolism induced by methotrexate and prevents excess toxicity. Other active agents include the antitumor antibiotic, adriamycin, used alone[9] or in combination with methotrexate and alkylating agents.[10] The ability of chemotherapy to produce regression of established metastatic disease is dramatically demonstrated by the following case history.

A 38-year-old white male noted vague discomfort about his left knee in January, 1972. Physical examination was unremarkable. The symptoms persisted and in August, 1972, a mass deep in the left popliteal fossa was detected. Radiographs demonstrated only a soft tissue mass. A biopsy specimen was interpreted as fibrosarcoma and a high thigh amputation subsequently performed. Pathologic exam revealed a classic osteogenic sarcoma of the distal femur. The chest X-ray was normal and the patient was followed closely without therapy. A solitary nodule appeared in the right lower lobe in January, 1973, and increased in size during the following two months (Figure 1). This nodule was consistent with metastatic disease and in April, 1973, monthly cycles of adriamycin and DIC (dimethyimidazole carboximide) were initiated. In addition, he received BCG via scarification technique twice monthly. By June, 1973, the lung nodule had disappeared and the chest X-ray remains normal to the present time (Figure 2). Chemotherapy was discontinued in September, 1973, and he has remained well on monthly BCG alone with the most recent follow-up in February, 1975.

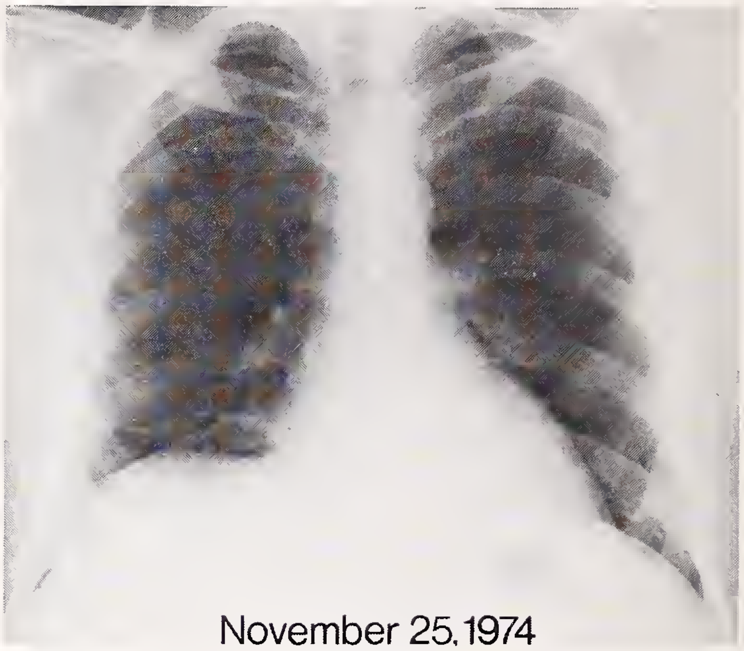


March 22.1973

Figure 1

Chest X-ray obtained prior to initiation of chemotherapy showing metastatic osteogenic sarcoma (March 22, 1973).

While response of this nature is unusual, if not unique, it does suggest the potential of a similar program when used in adjuvant therapy following surgery. Following development of effective drug programs for gross metastatic disease, these programs were soon applied as adjuvant surgery. Preliminary results of these studies have now been reported. Using high dose methotrexate with citrovorum factor rescue plus vincristine at three-week intervals for 2 years following surgery, Jaffe et al, from Boston treated 12 patients with classic osteogenic sarcoma in whom local control of the primary lesion was achieved by amputation.[11] Eleven of the 12 remain free of metastatic disease 6 to 27 months following surgery. This is contrasted to the 7 patients expected to relapse without chemotherapy. The use of adriamycin (90 mg/M^2 IV every 4-6 weeks) for 6 courses in 13 patients who had radical amputation for osteogenic sarcoma resulted in 10 of the 13 having continued disease-free survival ranging from 9 to 40 months after surgery.[12] Another 4-drug adjuvant regimen (cyclophosphamide, vincristine, melphalan, and adriamycin) was used for 18 months by Sutow and Husey for treatment of 18 children with osteogenic sarcoma. Ten patients remain free of disease 27 to 41 months following amputation.[13,14]



November 25.1974

Figure 2

A follow-up film (November 25, 1974) remains normal with the patient maintained on immunotherapy alone with BCG.

The ability of adjuvant chemotherapy to delay the appearance of pulmonary metastasis and prevent early death is clearly established by these studies. Whether this indicates cure (and it probably does) will be determined by following these patients for longer periods of time. The prolonged disease-free survival following cessation of chemotherapy in Sutow's patients strongly suggests that prevention of progressive metastatic disease has been accomplished. We feel that these early results represent a major change in the natural history of osteogenic sarcoma. Although radical surgical amputation continues to be necessary for local control of the primary site, orthopedic surgical advances utilizing prosthetic femurs offer the hope that preservation of involved extremeties may be feasible. Extension of adjuvant chemotherapy to the setting of the patient with resectable pulmonary metastases should be considered also. Immunotherapy using non-specific (BCG) or specific (Transfor Factor) immune stimulation is a reasonable addition to adjuvant drug therapy and warrants investigation.

The cited studies justify the institution of adjuvant chemotherapy for all patients with osteogenic sarcoma soon following surgery, despite the discomfort and toxicity of such therapy. Application of therapy should be undertaken by a medical oncologist and ideally should be conducted in conjunction with a research center to facilitate definition of the optimal therapy for osteogenic sarcoma. The Southwest Oncology Group protocol presently in use at the University of Arizona employs cyclophosphamide, vincristine, adrianmycin and dimethyl imidazole carboxamide given in a cyclic fashion for 12 months post surgery. Preliminary results of this study are comparable to those previously cited. We would recommend that patients in Arizona with osteogenic sarcoma receive adjuvant chemotherapy as a part of their overall cancer management. Medical oncologists in Phoenix and Tucson are familiar with this approach to therapy.

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EDITOR'S COMMENT:
PERSPECTIVE OF THE SURGICAL ONCOLOGIST

DARWIN W. NEUBAUER, M.D.

Treatment of malignant disease, particularly in the area of bone and soft tissue tumors, must become a multi-disciplinary approach. This is an oft-repeated concept, but with the strides taken in radiation therapy, the definite progress of chemotherapy and the as yet, limited success of immunotherapy, more than ever, plans of therapy must be made early. This concept is clearly underscored in the preceding paper by Dr. Lloyd on the treatment of osteogenic sarcoma which placed surgery, chemotherapy and immunotherapy in perspective for this tumor. It is an extremely rare case of cancer that can be treated "early," for only after the tumor has become explosive is the solid tumor detectable. For most types of cancer it is rare to detect the palpable tumor before it is 1 cm. in diameter or approximately 1 billion cell. At that point the patient's immunological resistance may well have been surpassed. Some evidence suggests that at that point "blocking" antibodies may act to protect the tumor rather than the host and prevent destruction by immune lymphocytes.

Our present failure rate by surgery alone is unacceptable. Efforts have been made to extend surgical operations, but the extended operation in most cases is doomed to failure as the cancer is already a systemic disease with distant micrometastases. The supra-radical procedure is overwhelming to the patient with a morbidity and mortality that is prohibitive for the very limited addition in cure rate. However, these extensive procedures are detrimental to host resistance.

It therefore appears that our potential for added cures and for prolongation of useful life depends not upon extended surgery, but rather upon cooperative efforts, planned as early in the course of treatment as possible. This necessitates

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discussion pre-operatively and/or pre-radiation therapy with the medical oncologist and consideration given to added chemotherapy and immunotherapy.

Surgery can remove in many or most cases "the tumor burden." Radiation therapy can by itself or in conjunction with surgery control the local disease. However, neither can eliminate the micrometastasis; here chemotherapy can further cut the malignant cell population, but to date this step too seems to fail in solid tumors to attain a total cell kill.

While chemotherapy will temporarily cut the immune defense of the body there is a rapid rebound of the immune mechanism. If such is the case, should we not so plan our therapy to assist the immune defense as much as feasible?

It would appear that as surgeons we should do as thorough an operation as possible and remove the bulk of tumor cells. Local therapy should, in turn, be supplemented by a pre- or post-operative radiation as indicated. Then before there is a recurrence with an excessive overburden of tumor cells, give the medical oncologist the opportunity to treat with chemotherapy or supplement the immune response specifically or generally while the host is in a position to participate in the fight against his malignancy. This type of combined modality approach should benefit more patients.

Seminars in Endocrinology and Metabolism

THERAPEUTICS: RECENT SUGGESTIONS FOR THE TREATMENT OF HYPOTHYROIDISM & DIABETES MELLITUS

MARSHALL B. BLOCK, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

Increasing awareness of the complexity of thyroid gland physiology has accrued from the development of both basic and applied clinical research. Availability of purified synthetic preparations of thyroid releasing hormone purportedly made in the hypothalamus and the availability of precise and reproducible measurements of triiodothyronine (T_3) in the peripheral circulation of man has greatly enhanced our understanding of thyroid gland physiology. It has recently become apparent that the thyroid gland makes only a small portion of the circulating amounts of serum T_3. It appears that significant quantities of T_3 are made in the body by the peripheral de-iodination of thyroxine (T_4).[1] Thus, circulating levels of T_3 are derived from thyroid gland secretion of intact T_4 as well as that produced by the peripheral action of dehalogenase enzymes on T_4. This finding has a great deal of clinical relevance. Heretofore pa-

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atients have been treated with natural T_3 or T_4 or combinations of synthetic T_3 and T_4. Peripheral levels of T_4 and T_3 in patients treated with such compounds revealed elevated T_3 concentrations. This is thought to be due to a combination of T_3 in the pill itself and the T_3 generated from the compounds' T_4 in the periphery. On the other hand, studies of patients taking appropriate preparations having only T_4, have shown that T_3 and T_4 levels are in the normal physiological range. It has been recommended therefore, that patients requiring thyroid hormone for physiological replacement be given compounds containing just T_4. Thus, preparations such as desiccated thyroid, USP thyroid, Proloid, Euthroid, etc. would appear *not* to be the ideal agents of choice. In their stead compounds such as Letter or Synthroid should be utilized. Interestingly, in addition, these studies have indicated that the minimally effective dose for replacement therapy is much smaller than had previously been recognized. Doses of 2 to 3 grains of desiccated thyroid were usual in the thyroid deprived patient. However, with our newer measurements, doses in the .1 to .2 mg a day range of T_4 usually supplies normal physiological levels of both T_3 and T_4. Thus replacement doses should approximate .15 mg a day with these T_4 compounds.[2] This obviously obviates the problems inherent in desiccated thyroid preparations which are standardized by their iodine content rather than their thyroxine concentration. It has recently been shown that these compounds' potency varies from lot to lot depending upon several factors.

The second major change in our therapeutic armamentarium appears to be in the treatment of diabetes mellitus. The conclusions of the University Group Diabetes Program (UGDP) were startling to say the least.[3-5] Increased deaths from cardiovascuar causes were found in the group of patients treated with sulfonylurea and phenformin compounds. The initial response to this finding by the American Diabetes Association, the Endocrine Society and the American Medical Association as well as the Food and Drug Administration was that patients who could not adequately be treated with diet alone probably should be treated with insulin and only under unusual circumstances should sulfonylureas be utilized. This in turn led to a great deal of controversy over whether the findings of the UGDP study were valid and a number of important statistical as well as methodological objections were raised by several authors. Subsquently, the National Institutes of Health recommended that the UGDP study be given an independent statistical review and the prestigious Biometric Society undertook such a study. The results of this committee's report was published in the February 10, 1975 issue of the Journal of the American Medical Association and should be perused by all interested physicians who treat patients with these agents.[6] They concluded that the "UGDP trial has raised suspicions that cannot be dismissed on the basis of other evidence presently available." They found "most of the criticisms leveled against the UGDP findings on the point of cardiovascular mortality unpersuavive." They concluded that "in light of the UGDP findings it remains with the proponents of the oral hyperglycemics to conduct scientifically adequate studies to justify the continued use of such agents." An accompanying editorial by Thomas C. Chalmers of Mt. Sinai Medical Center in New York reinforced these findings by the following important statements: "Informed consent should be obtained from all patients and should include a full description of those risks and the potential benefits." He suggested that "if physicians are willing to take the time to encourage effective dietary regimens, the inconvenience to the patient will be a small price to pay for prolongation of a relatively healthy life. The monetary savings will be enormous, encompassing not only the costs of medications, but also the hard-to-measure losses that result from premature death." It thus becomes apparent from these publications that the continued use of the oral hyperglycemic agents cannot continue as indiscriminately as they have in the past. Obviously the medical-legal implications of these findings needs to be analyzed by each individual physician. Dr. Chalmers in his editorial hinted at a future development which may force physicians to follow the above recommendations by the Food and Drug Administration. "A distinct slowness on the part of the Food and Drug Administration to issue meaningful package inserts that should force physicians to obtain truly informed consent before they use the oral agents" has hindered the discontinuance of these drugs in clinical practice.

It would seem to this author that during this period of uncertainty, the wisest course of action for this practicing physician would be to follow the recommendations of the American Diabetes Association which are basically those of the UGDP study. For, if the results of the UGDP study are shown to be ultimately incorrect no harm will be done, while if the reverse is true, i.e., the UGDP study is correct, lives may be prolonged.

These two recent findings in the field of therapeutics dealing with endocrine and metabolic conditions deserve the attention of practicing physicians and the underlying references for them should be reviewed.

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In Memoriam

NEIL C. ALDEN, M.D.

1923 - 1975

Neil Charles Alden, 51, died suddenly on January 11, 1975 after a five-day illness. His wife, Blanche, his son, Neil Jr. and his wife Bea and his daughter Susan survive him. To his family and all of us who knew him well, a great void remains behind. Such a happy, cheerful friend was Neil. He always greeted us with a friendly smile, a warm hello and a sincere inquiry about our well-being and we knew he meant it when he asked us how we were doing.

Neil was a big hulk of a man. He had to be to hold that great heart. He lumbered through his days with a rolling gait that was characteristic of only him. There was no mistake who it was, either coming or going. Yes, there could only be one Neil and he always had a story for us to brighten up the day. How he could remember them all was just another facet of a brilliant mind, interested in all about him.

He was curious and inquisitive about everything. Electronics was a great challenge to him and he was forever tinkering with some gadget or another. He put together a custom burglar alarm for his home and another for his car and even rigged up a depth finder for his boat. Or he was carving to scale, a replica of the human spine to help him teach the intricacies of spondylolisthesis to his residents. During his day he would take time to photograph the unusual skin lesions that he saw to add to a great collection of dermatological slides, also to help teach the young physician to recognize the important growths on man's cutaneous coverings.

And yet another facet: he was a great musician. He worked his way through school playing in a dance band, base fiddle, baritone horn, organ or guitar. He could seldom pass by a piano without sitting down and improvising a tune and he was willing to play for hours, as long as the company was in the mood. His Conn organ was a great relaxation for Neil and he spent many an evening with the melodies he could draw from this modern harpsichord.

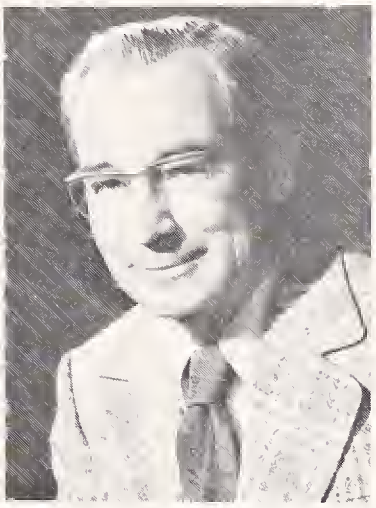
Most of all, however, Neil loved his profession. He thoroughly enjoyed taking care of people, solving their problems, explaining the intricacies of their physiology in the way each could understand and being their friend and confidant. He had a sincere interest in the problems of his patients and was always willing to give them his undivided attention. This earned him their unfailing loyalty and sincere friendship.

We cannot replace this great friend. There will be none other like him. We are left only to find a substitute but the facsimile will never be able to fill the place he held in our hearts. Until we meet again, Neil . . .

Robert A. Price, M.D.

Editorial

RHYTHM



WILLIAM B. McGRATH, M.D.

The laws of nature are expressed in rhythm. Hence rhythm is or should be a sixth sense in man.

It is wonderful how one can still recall a nursery rhyme, or a line of poetry or a popular song from twenty or thirty years ago. An unforgettable example is the mnemonic for the cranial nerves: "On old Olympic's towering tops a Finn and German brewed some hops," or the one-two beat of the bady one for the bones of the wrist. Before literacy or printing, the progenitors of historians and newsmen were first the drummer in the forest and then the balladeer.

1. Internal rhythms: A heart severed from the body and immersed in sea water will go on pumping for scary hours. Our most deeply affecting dances and songs take their resonance from the metronomes of biology. The measured timing of music originally derived from the pulse rate and from the number of steps per minute a man would take in normal striding.

So the child and the old person are rocked to sleep. And a group of men move into a natural cadence when hauling on a rope or swinging sledgehammers or pulling on oars.

2. Solar or Circadian Rhythms: (The word, circadian, means about a day.) Everything in the world, organic or inorganic, responds to the rheostatic changes from dawn to day, to twilight to dark. Man gets no energy, no nourishment from his electric bulbs. They keep him aroused when he should be at rest. Man-made clocks do not take into account the length of day, the time variations in the rising and the setting of the sun. Man-made clocks are as rigid and fixed as a casket nailed shut, and so are man-made schedules.

Closing, opening, sleeping, waking, grazing, hunting, working, resting — all life is an infant nursing in the sun.

3. Lunar Rhythm: The "mens" in menstruations, of course, is monthly. Some breeding cycles are precisely determined by the synodic month; i.e., the period between one new moon and the next. Witness the accuracy with which the beaching and egg-laying of grunion can be predicted on the California coast. Reproduction is everywhere tidal, with semi-monthly periods of estrus.

Unlike other animals, the heedless human male does not await the phasic readiness and hospitality of the female. Demanding only his own gratification, he simply ignores his cues and soon forgets them.

The moon forever rocks the cradle of life.

4. Sidereal Rhythms: Everything on earth changes with the seasons of the year. Everything is born and grows, reproduces and dies in season. Earthly seasons are differint according to distance from the equator. Correspondingly different are people and their ways. One only has to compare the music or literature or temperaments of northern climes with those of the jungle. Music takes place in time; painting and sculpture occupy space. Ruskin said: "All art aspires to the condition of music."

The premise of astrology in ancestral eras was valid. Nutrition, migration, reproduction — all depended on the solstice of the sun and its aspect to the planets and to the constellations.

So the sun and the moon and the stars do influence man's destiny, as they always have. For a little while, in geologic time, we have been out of harmony with nature and inattentive to its fundamental rhythms.

No wonder we are sick. Many of the most widespread and miserable afflictions are seemingly related to stress and more or less peculiar to man. This is because technology, outstripping widom, has let us disobey laws so profound and secret that only the drums reveal them.

ArMA
Medical History

ARIZONA MENTAL HEALTH IN TERRITORIAL DAYS – Part IV

Dry Gulch Jake

REPORT OF THE MEDICAL SUPERINTENDENT OF THE INSANE ASYLUM OF ARIZONA

Phoenix, Arizona, October 1, 1900
To His Excellency, Governor N. O. Murphy:

Sir: I have the honor to submit the seventh biennial report of the affairs of this institution. In accordance with the act of the Twenty-first Legislature establishing the fiscal year, this report covers a period of eighteen months extending from January 1, 1900, with which date the period covered by the previous report closes, to June 30, 1900.

In the tables covering my report this period of eighteen months is divided in accordance with the fiscal year into two periods, viz: January 1, 1899, to June 30, 1900. As a preliminary to the compilation of these tables, a record of all patients admitted to the institution since its opening was constructed from the commitments and other records of the institution. Careful discussion of discrepancies and comparison of all available data have eliminated many of the grosser errors and filled many of the glaring omissions which previously existed in the records of the institution. In course of the preparation of this register the disposal of all but three of the seventeen patients noted as missing in my report for 1897-1898, was found to have been recorded, though in an obscure manner. All those patients carried on the records as visiting by the preceding administration, none of whom have since communicated with the asylum, are considered in these tables as discharged from the date of parole.

There were admitted during the period, 73 men and 10 women, a total of 93, the ratio being approximately seven males to two females, the same ratio obtains substantially since the opening of the asylum and is only a little larger than the ratio of males to females in the present population of the asylum (June 30, 1900), which is in accord with the observed fact that the female insane are longer lived than the male. The percentage of recoveries, calculated on Table 3 shows the number of insane admitted from each county and the ratio of insane persons to population in each county. It will be noted that the number of insane persons credited to certain counties, particularly Maricopa, is out of proportion to the population. This disproportion may be assigned to three causes: First, citizens of other counties come to the asylum for treatment and are committed here; second, in counties conveniently near the asylum, mildly insane persons and persons perhaps not insane, but objectionable on account of their deficient mental condition are committed to the asylum for lack of a more appropriate place; third perhaps the most potent factor is creating the disproportion noted is to be found in the fact that the pecularities of eccentric and mildly insane persons are more likely to be overlooked in sparsely-settled communities. In substantiation of this it may be observed that the average number of insane per hundred thousand of population in this Territory, which is 143.19, is much lower than the average for the United States, which in 1890 was 170.0 and still less than the average for the group of Western states and territories of which Arizona is a member, which in 1890 was 194.1. From which we may infer that the average insanity in the more popular counties is probably but little greater than the true average for the Territory.

Tables 9 and 10 exhibit statistics of the cause and form of insanity of patients admitted. The data for table 9 is taken from the commitments which accompany patients. It is necessarily inaccurate on account of the inability of the examining physician to determine the usually obscure causes of insanity in a short interview with the afflicted person.

Having discussed the statistical account of the operations of the institution, I may now speak in a more general way of the details of its history, which merit particular attention.

. . . Casualties have been few. One male patient, a Mexican, swallowed a small quantity of concentrated lye, which he surreptitiously obtained while the attention of the attendant who was supervising its use was momentarily attracted in another direction. Every effort was made to save his life, but unsuccessfully. *Another patient, while at the Agua Caliente Hot Springs in care of attendant, was bitten by a rattlesnake and died.* One patient managed to crawl over the top of one of the short screens in the upper ward and dropped to the ground, fortunatey sustaining no more serious injury than a sprained ankle. Attention has been called to these short screens and their replacement recommended a number of times, but this is the first practical demonstration of their danger that we have had. At another time two patients escaped at night from the upper ward by wrenching the screen from its insecure fastening on the old and frail window casing. These patients lowered themselves to the ground, a distance of nearly thirty feet, by means of an old piece of sash cord, and at the imminent risk of falling.

TABLE 9
CAUSE OF INSANITY

As assigned in commitments of patients
by examining physicians

	6 Mo. 1899			1899-1900		
	M.	F.	T.	M.	F.	T.
Alcoholism	3	1	4	7		7
Apoplexy	2		2			
Brain Disease					1	1
Confinement				2		2
Domestic Trouble				1	2	3
Epilepsy	1	1	2			
Exposure	1		1	2		2
Fright					1	1
Heredity		1	1			
Immorality	1		1			
Injury to head	2		2	2		2
Insomnia	1		1			
La Grippe	1			1		1
Lightning stroke				1		1
Masturbation	1		1	4		4
Meningitis	1		1			
Menopause					1	1
Menstrual trouble		1	1		1	1
Narcotism	1		1	3	1	4
Nephritis					1	1
Overwork				1		1
Religion		1	1	3	3	6
Solitary Life	1		1			
Syphilis	4		4	4		4
Tuberculosis				1		1
Uraemia				1		1
Uterine disease					1	
Want of Work	1			1		1
Worry				1		1
Not stated	4	4	9	14		14

TABLE 10
FORM OF INSANITY

	6 Mo. 1899			1899-1900		
	M.	F.	T.	M.	F.	T.
Mania	10	2	12	21	3	24
Religious mania	1	1	2	1		1
Acute mania	2		2	1	1	2
Chronic mania	1	1	2	1		1
Dipsomania				5		5
Narcomania	1		1	4	1	5
Melancholia	7	3	10	6	6	12
Dementia				3		3
Epilepsy	1	1	2			
Imbecility				1		1
Paresis				1		1
Not Insane	1	1	2	1		1
Unascertained				4		4

As regards the treatment of insanity in this hospital little can be said. Medical treatment is given in such cases as are amenable to it; the epileptics in particular have been found to be benefited by treatment. A number of cases of narcotism have been treated. These patients are discharged entirely relieved and always much better health than on admission, but I regret to state that they have generally found themselves unable to resist temptation. . . .

Complete mental rest and mild physical employment have been found most efficacious in relieving cases of temporary insanity. Employment and amusement are the principal means of diverting the patients and are used as extensively as possible. . . .

. . . I must call attention to the existence of a number of cases in which surgical interference would probably be followed by recovery. This institution has absolutely no facilities of the necessary operation nor for the care of patients after the operation. The purchase of the necessary instruments and apparatus would be a paying investment in view of the relatively greater cost of the continued maintenance of this dangerous class of patients even if we lay aside the consideration of their reputation to reason. Insanity in women is commonly caused by pelvic diseases which may be remedied by surgical means. This hospital is not at present provided with the necessary appliances for the diagnosis of such cases much less their operative correction.

. . . During the spring of 1900 I attended the annual convention of the California State Medical Association and while in that state visited three of the principal institutions for the insane. While I saw many details which could be imitated with benefit to this institution, in general the comparison which I was enabled to make is on the whole creditable to this institution, particularly as regards methods of treatment and administration.

. . . The sum of $12,000 appropriated by the last Legislature made it possible to make the extensive repairs and improvements which have long been needed.

The new buildings constructed include a large adobe building . . . for carpenter shop and paint shop, a building of eight rooms underneath and tank to accommodate the dairy, potato room, tool room and bedrooms for four employees. A new bake oven has been built. A large part of the appropriated sum was spent on new work in the asylum building. In particular may be mentioned the cement floor throughout the basement and the wooden floors throughout all of the upper wards . . . To a great extent entirely new ceilings were put in the sleeping rooms in the wards and in the basement hall in the central building.

. . . A completely new system of steam heating has been installed throughout the asylum building and the general dining hall. The plumbing system was almost entirely renewed. . . .

. . . The cracks throughout the building, the result of improper construction had increased in size and number to such an alarming extent that it was deemed necessary to secure the walls by means of stayrods. The building is now considered to be safe.

. . . My recommendations for the future are of two classes: First, needed legislation, second, needed improvements.

A law excluding from the asylum such ineligible classes as inebriates, idiots and imbeciles, is desirable. The former is not insane ordinarily and the loss of mental equilibrium is generally of such short duration as to make confinement in the asylum a needless expense; the second class is not amenable to treatment and we have no facilities for their education, nor are they dangerous to be at large, so why should the burden of their support be thrown upon this Institution. Several patients in a dying condition have been sent to the asylum, their delirium being mistaken (?) for insanity. A number of cases have occurred in which wholly ineligible persons have been sent to the asylum, possibly through deception practiced by interested persons.

I would advise the establishment by law of a probationary period for the detention of insane persons for the determination of their sanity. The establishment of such a term of probation would relieve the superintendent of the asylum of liability for damage on account of the detention of persons who are really sane during the period necessary to determine this point.

In view of an unfortunate accident which has occurred after the close of the period covered by this report, I would earnestly advise the asylum to lay aside all firearms and other weapons while in charge of such insane persons. *(This rather cryptic note is not explained but it would appear that a patient confiscated the gun of a law officer.)*

A legal provision requiring at least partial support of patients not without means to do so is needed.

Owing to the crowded condition of the asylum and the rapid increase of patients a new wing with the following accommodations will soon be a necessity:

Two or more wards for patients. An infirmary or sick ward. A class room for training school. Dispensary. Operating room. Examination room. Laboratory. Morgue.

Such a building, if created at the rear of the center of the present building, would afford a covered way for the patients to reach the dining hall, a great desideratum in wet weather. In time it will also be necessary to construct cottages for convalescent patients.

In conclusion I wish to thank all who have contributed to the comfort or amusement of the patients, particularly the Phoenix Stationery and News Co., for the donation of a large number of magazines; also to the Sells, Main and Gentry Circus Companies for complimentary tickets for the use of patients.

I wish to thank the Board of Control and the officers and employees of this institution, for their co-operation and for numerous courtesies.

Respectfully submitted
J. Miller, M.D.
Medical Superintendent

. . . an account of the investigation by the legislature into the misappropriation of funds by the Arizona Asylum for the Insane Board. A reader has kindly sent us the following poem dedicated to the "Insane Board," which appeared on June 14, 1886 in the Prescott Morning Courier:

INSANE BOARD

(Dedicated to Messrs. Stewart, Lincoln and Hatch)

Appointed to a trusty place
Which should be filled with zeal and
grace —
Who squandered funds at rapid pace?
"Insane Board"

Who when removed, attempted
"bluff?" —
Avowed they hadn't had enough?
"The courts will not treat us so rough"
"Insane Board"

Who swore that by no hook or crook
Upon the coin should Zulick look, —
Or see the secretary's book? —
"Insane Board"

Who said they thought the question
rash,
When asked what place they kept
their cash?
Whose sole defense was "cheek" and
"brash?"
"Insane Board"

Who, when the matter came to court,
Knowing their time was growing short
Vamoosed the country, quick as
thought? —
"Insane Board"

And who, with his respect for law,
Wish not to feel the hatter draw? —
"Insane Board"

Phoenix (sic) Gazette.

It appears to be a reprint from the Phoenix Gazette.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

LEGISLATIVE COMMITTEE

The meeting of the Legislative Committee of the Arizona Medical Associationn, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, January 18, 1975, a quorum being present, convened at 12:20 p.m., Edward Sattenspiel, M.D., Chairman, presiding.

DEFINITION OF TERMS

Dr. Sattenspiel explained the terminology used by the Legislative Committee and meanings thereof as follows:

ACTIVE SUPPORT: Means approval of bill and maximum staff time and financial expenditure (including legal counsel) will be made to achieve enactment.

GENERAL SUPPORT: Means approval of the principle of the bill, but that staff time and financial expenditure will be limited.

NO ACTION: Means no position has been taken one way or another on the bill.

NONSUPPORT: Means disapproval of this bill, but that staff time and financial expenditure will be limited to defeat the bill.

ACTIVE NONSUPPORT: Means disapproval of bill and that maximum staff time and financial expenditure (including legal counsel) will be expended to achieve defeat of the bill.

VICE CHAIRMAN

It was moved and carried to appoint Wilfred M. Potter, M.D., as Vice Chairman of the Legislative Committee.

PROPOSED LEGISLATION

BOMEX

The Board of Medical Examiners has requested that the Association introduce legislation to: eliminate Internships and Residencies from the Medical Practice Act and replace it with the term Graduate Medical Education Training Programs; add the Medical Council of Canada as an approved agency for graduate medical education training programs; add to definitions: Dangerous Drugs, Drug Abuse, Drug Dependency and Therapeutic Standards; expand the membership of BOMEX to nine members, to include one layman and extend the period of membership to two full four-year terms.

It was moved and carried to actively support legislation to expand the membership of BOMEX to nine members including one layman and to extend the period of membership to two full four-year terms.

BOMEX — 5th Pathway

The Board of Medical Examiners has requested that the Association review proposed legislation by the North

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*Reprinted with permission of the Palo Verde Foundation for Mental Health from Arizona Psychiatry, "Arizona Mental Health in Territorial Days," Vol. 4, No. 1 & 2, 1971, pp. 11-14.

American Autonomous Students Association (NASA) to provide an alternative method for U. S. citizens who are graduates of foreign medical schools to qualify for internship after a year of clinical study (5th Pathway). Mr. Boykin informed the Committee that the 5th Pathway is acceptable for licensure in Arizona. The Committee was informed that the University of Arizona College of Medicine has considered the program,'however, funding is unavailable for such a separate program.

It was moved and carried to offer non-support to provide the 5th Pathway in statute form.

Acupuncture

The Arizona Osteopathic Medical Association has requested support and co-sponsorship of legislation limiting the practice of Acupuncture, Resolution adopted by the Osteopathic Association on November 9, 1974 as follows:

> "That the Arizona Osteopathic Medical Association recommend to the Legislature of the State of Arizona that legislation be introduced and passed to accomplish the following:
>
> 1. To limit the practice of acupuncture to duly licensed physicians (M.D. and D.O.) and dentists who are considered adequately trained in the field of acupuncture and duly certified in this field by the Arizona Board of Medical Examiners or the Arizona Board of Osteopathic Examiners in Medicine and Surgery.
> 2. To direct the licensing boards for physicians and dentists to establish standards of training and professional conduct in the field of acupuncture which must be met by any physician or dentist prior to beginning or continuing the practice of acupuncture.
> 3. To establish penalties for the practice of acupuncture by any individual other than a duly licensed physician (M.D. or D.O.) or dentist.
>
> Be it further resolved that copies of this Resolution be transmitted to the Arizona Board of Osteopathic Examiners in Medicine and Surgery, the Arizona Medical Association, the Arizona Board of Medical Examiners, the Arizona Dental Association and the Arizona Board of Dental Examiners requesting that they actively support this action."

The ArMA Board of Directors in meeting held November 24, 1974 determined to be supportive of the efforts of the Arizona Osteopathic Medical Association in obtaining legislation to control Acupuncture and referred the matter to the Legislative Committee for action. The Board of Medical Examiners also reviewed the proposal and advised the Osteopathic Association that such legislation was unnecessary in that rules providing the same action have already been legally adopted.

It was moved and carried that the Board of Medical Examiners request an opinion of the Attorney General on acupuncture and failing receipt of a favorable opinion actively support legislation limiting acupuncture as a therapeutic modality of the practice of medicine.

Uniform Controlled Substance Act

The Arizona State Board of Pharmacy has requested the support of the Controlled Substance Act which they intend to re-introduce. Dr. John Carlson studied the 64-page bill and reported the provision thereof. Adoption of the Act will place Arizona in conformance with the Federal Act .

It was moved and carried to support the Uniform Controlled Substance Act as proposed by the Arizona State Board of Pharmacy.

SB 1001 — Improper Experimental Research Involving Humans

Senator John Roeder has introduced legislation prohibiting improper experimental research involving humans and establishing an experimentation protection committee to protect subjects involved in experimental research from torture or unreasonable physical or psychological abuse. It was noted that HEW has rules and regulations covering primarily the same provisions.

It was moved and carried to actively non-support SB 1001 Improper Experimental Research Involving Humans.

SB 1035 (1974) — Mental Commitment Bill

The Arizona Psychiatric Society has identified several problem areas with the mental commitment bill as adopted during the last session. Dr. Campbell reported that legislation has been introduced as a vehicle for correcting the mental commitment bill and the Society has requested support of the amendments. Some of the problems identified are as follows:

"A. The intent, to protect the patient's rights, announced in the preamble is unfortunately contraverted by provisions of content of the law. The procedure excludes alcoholics, drug abusers, quite against the long-standing annti-discriminatory policies of the AMA and APA. The exclusive definition of "danger to others" (overt behavior within 12 months) is most difficult to meet, unwarrantedly ties the hands of the judge and makes no allowance for need of treatment based on conditions other than dangerousness to self and others.

B. The specification of patient's rights (within the legislation itself) is difficult to work with, particularly the requirement that items be mentioned such as no fingerprinting and no photographing, when these procedures have never been applicable outside of the state hospital.

C. The empowering of the Medical Director to detain patients in his own facility is a blatant conflict of interest.

D. Treatment without consent before legal determination of incompetency is hazardous, particularly since liability cases in the Michigan and Federal courts ruled against hospitals and physicians.

E. The interruption of continuity of care in private hospitals for patients who have had petitions filed (who wanted to go AMA and are dangerous) and are awaiting Hearing is certainly against the patient's best interests.

F. The provision which precludes payment for involuntary evaluation of patients and yet provides no monies makes it impossible for funding of staff, bed, and service costs to private (and probably governmental treatment facilities.

G. Cumbersome forms, reporting techniques, and requirements for presence in court by mental health professionals make the evaluation function impractical for private agencies (who have performed these functions very readily to serve their patients and the community before this legislation was implemented).

H. The requirement that patients be treated 25 days in some other facility before being sent to the State Hospital is difficult to understand. If the State Hospital is to serve its traditional function, transfer should certainly be made more feasible regardless of a time limit.

I. The definition of Superior Court is restrictive and unworkable at present time."

To identify additional problem areas and substantiate those already noted the Society requested that the Association enclose a questionnaire in a mailing asking for the following information.

A. Have you encountered difficulty with the new commitment law?

B. Please give a short vignette as to the kind of difficulty encountered with each case.

C. Was there harm to self or others?

It was moved and carried to support the principle that SB 1035 is badly in need of amendments as suggested by the Arizona Psychiatric Society and further to recommend to the Board of Directors that they give due consideration to the gathering of information in support of amendments to SB 1035 as adopted during last session.

Prohibiting Unsolicited Samples of Dangerous Drugs

The Professional Committee requested that the Legislative Committee actively support legilation which would prohibit the distribution of unsolicited samples of dangerous drugs.

It was moved and carried to take no action on proposed legislation to prohibit distribution of unsolicited samples of dangerous drugs.

Registration of Pharmaceutical Detail Men

The Professional Committee recommended to the Legislative Committee that active support be given to proposed legislation requiring that the Board of Pharmacy register pharmaceutical detail men.

It was moved and carried to take no action on proposed legislation to register pharmaceutical detail men.

Labeling of Drugs, Narcotics

The State Board of Pharmacy is proposing legislation that prescription-only, dangerous drugs and narcotics manufactured after July 1, 1976 bear a label with the name of the Packager and the name of the Drug Formulation Manufacturer if different from the Packager.

It was moved and carried to take no action on legislation providing for the labeling of drugs.

Confidentiality of Medical Information

AMA has developed a draft model bill to provide for confidentiality of medical information. Because of the divergence of existing state legislation on the subject AMA suggests review by legal counsel prior to introduction.

It was moved and carried to recommend to the Board of Directors that they authorize Mr. Jacobson to review the model bill from AMA on confidentiality of medical information for possible introduction in Arizona.

Revising Exemptions from Health Care Institution Regulation

The State Department of Health Services is proposing legislation to exempt from the health care institution licensing provision all practitioners of the healing arts, outpatient public health clinics operated by a governmental agency and health screening procedures. It was noted that the word "private" in the current exemption (private offices and clinics of physicians) is creating some concern in the writing of rules and regulations.

It was moved and carried to offer general support to the proposed revisions of the exemptions from health care institutions licensing regulations and to strike the word "private" before "offices and clinics of physicians."

Mandatory Health Education

The Department of Health Services proposes legislation to make health education mandatory in grades one through twelve.

It was moved and carried to actively support legislation providing for mandatory health education.

Health Services — Research Expenditures

The Department of Health Services proposes legislation giving authority to the Director to make expenditures to support certain extraordinary or emergency research projects and will ask for an appropriation of $50,000.

It was moved and carried to generally support legislation providing authority to the Department of Health Services to financially support research projects.

Licensing of Environmental Laboratories

The Department of Health Services proposes legislation providing for the licensing of Environmental Laboratories.

It was moved and carried to accept the above-mentioned proposed legislation for information only.

Crippled Children Revolving Fund

The Department of Health Services proposed legislation providing for monies received from patients or third-party payors to be placed in a revolving fund for crippled children services and not revert to the General Fund.

It was moved and carried to generally support the crippled children revolving fund legislation.

Warning Labels — Alcoholic Beverages

Ernest C. Siegfried, M.D., Director, Pima County Health Department, requested the Association to support legislation requiring all alcoholic beverage containers for sale in Arizona to be labeled: "Warning — The contents of this container may be dangerous to health."

It was moved and carried to take no action on proposed legislation requiring a warning label on alcoholic beverages.

Compulsory Insurance Coverage for Complete Maternity Care

Dr. Sattenspiel informed the Committee that the American College of Obstetricians and Gynecologists has adopted a Resolution stating in part "that every insurer issuing health insurance provide coverage for complete maternity care." It is intended that each state adopt legislation providing for such coverage. It was noted that AMA adopted report "M" from the Board of Trustees and report "J" from the Council on Medical Services on December 4, 1974 recommending that health insurers be encouraged to provide complete maternity care benfits.

It was moved and carried to receive the action by the American College of Obstetricians and Gynecologists for information only.

Prescription Drug Substitution Law

Mrs. Williams, Chairman, Woman's Auxiliary Legislative Committee, informed the Committee that a Coalition for Prescription Drug Substitution and Advertising is seeking to repeal or amend the state anti-substitution law. The Coalition is working through the Senate Health and Welfare Committee to introduce such a measure.

It was moved and carried to take no action on the information presented regarding amendments to the Prescription Drug Substitution Law until proposed legislation is available for review.

Milk Code

The Department of Health Services is proposing legislation to remove power and duties relating to health and sanitation from the State Dairy Commission and vesting them with the Department of Health Services.

It was moved and carried to actively support legislation providing that regulation of milk and milk products is a health and sanitation program and should be administered by the Department of Health Services rather than the State Dairy Commission.

Cancer Quackery

William Trier, M.D., Chairman, Professional Committee, Arizona Division, American Cancer Society, reported on model legislation providing that every cancer drug or device offered be tested and approved for its safety and efficacy in its intended use prior to being so offered and that only physicians and dentists may diagnose and treat cancer.

It was moved and carried to actively support introduction and passage of a cancer quackery bill by the Arizona Division of the American Cancer Society.

Taxation — Provision for Keough Deduction

Mr. Barnett informed the Committee that legislation is being introduced to provide for a state tax deduction of $7,500 (Keough) for retirement benefits by the State Bar and Arizona Society of C.P.A.'s.

It was moved and carried to actively support legislation providing for the Keough Plan to the maximum allowed $7,500.

Medical Malpractice

There was considerable discussion concerning the current crisis of availability of professional liability insurance and the increased premiums. It was generally agreed that a sub-committee appointed by the Chairman should introduce appropriate legislation concerning this matter.

The chairman appointed the following to the subcommittee on medical malpractice:

O. Melvin Phillips, M.D., Chairman
Donald Howland, M.D.
Donald Davis, M.D.
Richard Abbuhl, M.D.

NEXT MEETING

It was announced that the Legislative Committee would meet next on Saturday, March 1, 1975 at 12 noon.

Meeting adjourned.

William E. Crisp, M.D.
Secretary

EXECUTIVE COMMITTEE

The meeting of the Exexecutive Committee of The Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Friday, February 21, 1975, a quorum being present, convened at 7:04 p.m., William G. Payne, M.D., Chairman and President, presiding.

MINUTES

The minutes of the meeting held November 23, 1974 were approved as distributed.

DEPARTMENT OF HEALTH SERVICES

James L. Schamadan, M.D., reviewed the current activities of the Department of Health Services relating to Medicaid, the Crippled Children's Services suit, Environmental programs, and the paramedic training program. He indicated that due to funding problems it appears that a maximum of 250,000 people can be covered.

MATERNAL AND CHILD HEALTH CARE COMMITTEE

Drs. Jennett and Moore related the development and present status of the Robert Wood Johnson Foundation grant application and the need to create an "Arizona Perinatology Commission" as a free standing corporation to be the recipient of the funds.

It was moved and carried to authorize Edward Jacobson to proceed with the development of such a corporate structure.

TRAVELERS INSURANCE COMPANIES

Mr. Leon Zaccaro reviewed with the Executive Committee the presentation to be made to the Board of Directors on February 22, 1975. He also reviewed the activities of the American Insurance Association as they relate to their work on malpractice legislation.

MEMBERSHIP COMMITTEE

The AMA letter of December 20, 1974 regarding the establishment of a state level membership committee was reviewed and the matter tabled.

P.S.R.O. AND HOSPITALS

Dr. James A. Austin's letter of November 19, 1974 was reviewed. It was determined that there is confusion over the term "P.S.R.O." and that a letter of explanation should be sent to Dr. Austin.

PROGRAM FOR HEALTH SYSTEMS MANAGEMENT

The subject Harvard University program on the agenda at the request of Dr. Crisp, who had to leave before it was was discussed. No action.

ASSISTANT DEANSHIP FOR C.M.E.

Dr. Louis J. Kettel's letter of January 10, 1975 thanking the Association for their help in interviewing candidates for the subject position was received.

TRAVEL POLICY

At Dr. W. Scott Chisholm's request, his suggestion to change current travel policies was reviewed. It was noted that the Finance Committee had acted on this matter.

It was moved and carried to sustain the position of the Finance Committee, which was to not change the current travel policy.

CASE REVIEWS

The committee reviewed 20 professional liability applications and cases and made various evaluations.

The committee then reviewed the entire system and program relating to review of professional liability applications and determined to create a new committee and program generally following the outline set forth below:

A. **Committee Composition**

1. **Specialty Representation.** It is suggested that a spectrum of specialties be represented on the committee. The following specialties are recommended:
    - a) Anesthesiology
    - b) General Surgery
    - c) Internal Medicine
    - d) Pathology
    - e) OB/GYN
    - f) Orthopedic Surgery
    - g) Radiology
    - h) General Medicine
2. **Geographical Representation.** It is valuable to include specialists from the major geographical areas within a medical society, as well as a staff member from each of the major hospitals. This will better ensure knowledge of the physician who is being reviewed.

B. **Scheduling**

We have found that evening committee meetings result in the best attendance. It is recognized, however, that this is not possible or desirable in some societies. Most of the meetings which Travelers and J&H have attended usually were about two hours in length. This permits review of a good number of applications or current practice questionnaires. It is important that regular meetings be held in order to preclude the accumulation of a backlog of applications. Regular monthly meetings are held in most societies.

C. **Advance Preparation**

1. **Pre-screening of Applications.** Staff pre-screening of applications for completeness improves the effectiveness of the review committee. This precludes the necessity of having to pend the application until the next meeting due to lack of required information. In addition, it is suggested that applications be separated into groups based on the depth of review required. The following grouping is used by several societies:
    - a) Those with no past claims, questionable practice characteristics or individual problems.
    - b) Those with past claims but no other apparent problems.
    - c) Those with past claims and/or questionable practice characteristics or individual problems.
2. **Supplemental Information.** If initial staff review reveals incomplete information, this data should be requested prior to the regular committee meeting. Furthermore, after the committee has held several meetings, it will be possible to anticipate requirements from supplemental information in certain situations.

D. **Review Considerations**

The following areas should be considered in reviewing each applicant:

1. Past Claims
    - a) Questionable practice or judgment
    - b) At fault
2. Practice Characteristics
    - a) Questionable procedures
    - b) Poor patient rapport
    - c) At fault fee complaints
    - d) Perceptorship of privileges
    - e) Restriction of privileges
    - f) Suspension of privileges
    - g) Investigation or probation by Board of Medical Examiners
    - h) Loss of Narcotics License
    - i) Loss of Medical License
    - j) Operating beyond training or competence

E. **Interviews**

When interviews are necessary or desirable, the applicant should be advised beforehand if any documents or reports are required so that he may be prepared at his appearance. It should always be made clear at the interview that the committee's purpose is to pass information along to the insurance carrier and that the carrier has the sole responsibility for the final underwriting decision. To avoid breach of the statutory privileges which the committee enjoys, under no circumstances should the committee discuss with the applicant its point recommendation.

F. **Point Recommendations**

Points should be recommended based on the punitive rating schedule and noted on the routing slip which is attached to the application. Note any areas that the committee was unable to evaluate, such as claims with other carriers.

G. **Appeals**

Any applicant or insured may appeal the underwriting decision of Travelers to the grievance committee. The procedures require that the applicant write a letter to the Travelers appealing the decision. Travelers will acknowledge the appeal in writing, along with a request for additional information which the applicant will be directed to return to Travelers. The company will then forward the supplementary information to the Association for review. If necessary or desirable, the committee may request the applicant to appear at the committee meeting. Subsequent to reviewing the supplemental information, a joint recommendation should be forwarded to Travelers for a final underwriting decision.

It was determined to ask the various specialty societies to recommend names for possible appointment to the committee. As in all committees, the President, President-Elect and Secretary will be ex-officio members of the committee. The committee members are to be compensated at the rate of $50 per meeting plus expenses.

BICENTENNIAL COMMITTEE

It was moved and carried to create an ad hoc bicentennial committee to study the relationship between the Arizona Medical Association and the Bicentennial. Dr. Florence H. B. Yount to be asked to chair the committee.

25 YEARS OF INCORPORATION

It was moved and carried to recognize our 25th year of incorporation during our 84th Annual Meeting by presenting certificates to members of the original Board of Directors and a special plaque to Edward Jacobson who has been legal counsel since incorporation on June 16, 1950 during the april 26 meeting of the House of Delegates.

STUDENT AND RESIDENT AT JUNE AMA MEETING

It was determined to ask SAMA to choose the person to attend the June AMA meeting and to ask the Housestaff Section to choose the resident to attend.

BOARD OF DIRECTORS AGENDA

The Committee reviewed the Board of Directors agenda for the February 22, 1975 meeting and made various recommendations.

Meeting adjourned 12:06 a.m.

William E. Crisp, M.D.
Secretary

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, February 22, 1975, a quorum being present, convened at 10:09 a.m., William G. Payne, M.D., President and Chairman, presiding.

WELCOME

Dr. Payne extended welcome to the county society presidents and other guests

MINUTES

The minutes of the meeting held November 24, 1975 were approved as distributed.

TRAVELERS INSURANCE COMPANIES ANNUAL PRESENTATION

Mr. Leon J. Zaccaro, Secretary, Special Account Marketing, Casualty-Property, reported:

"The Arizona Medical Association's Sponsored Professional Liability Program, underwritten by The Travelers, is approaching its 5th year. Generally we are very pleased with the progress that the program has made and I am convinced it has been good for both the doctors in Arizona and The Travelers.

"We continually emphasized from the very beginning of the program that it would be a minimum of 3-5 years before we could really start rating the ARMA program on its own experience at the 100/300 level. We are now approaching that time. We indicated to you last year that trends were developing to the end that we were concerned as to the adquacy of the rate level. These trends are now much more pronounced to the degree that they cannot be minimized. The figures in the ARMA program as indicated by the attached exhibits show that a substantial rate increase is necessary at this time. In addition the catastrophe portion in the premium, based upon countrywide indications, must also be adjusted.

"As we did last year, we have again reallocated the expense portion of the premium dollar. The needed increase in loss dollars does not carry over all of the expenses. Therefore, we have increased the majority of the expenses only by an inflationary factor. The increase in rates, effective March 1, 1975 for new business and April 1, 1975 on renewal business, is dependent upon this new premium dollar breakdown.

"The average increase is 109%. In addition, we are introducing a new classification system. The increase therefore will vary by class but based on the current participation by specialty the average increase of 109% is maintained.

"We realize this increase is substantial, however it is necessary to protect the integrity of the program.

"Research has been progressing on a number of alternatives. In the long-run a number of considerations are possible, particularly through legislation.

"The Travelers is firmly committed to the proposition that a long range solution to the medical malpractice problem necessarily involves legislation to change the current tort system as it relates to malpractice claims.

"We are currently heavily involved with the American Insurance Association's Special Committee on Medical Malpractice which was created specifically for this purpose. Because of the urgency of this matter in several states, the Committee has set a target date of April 1, 1975 for its recommended solution.

"It would not be difficult to propose legislation which would drastically reduce physicians' exposure to malpractice claims. The difficult part is to develop a program which a state legislature would be willing to enact.

"Immediately, however, we see no alternative to a rate adjustment other than a claims-made form. In this respect the increase in the rate level can be reduced somewhat. We will be happy to discuss this with you and if you have interest we will develop the details of your approach.

"Effective with this rate increase the only limits of liability that will be available will be $1 million.

"Current participation in the program is at a level that we believe represents realistic penetration to have a viable program with sufficient credibility in the long-run. We therefore feel that efforts should be made to maintain a current level of doctor participation. In this we ask your cooperation to accomplish this.

"During the past four years we have each cooperated on this program to afford a stable market to the majority of the doctors in Arizona. I am confident through our continuing to work together we can maintain this program as a viable one to the benefit of all considered."

Mr. Zaccaro stated that it is absolutely untrue that The Travelers is thinking of pulling out of the program in Arizona. He stated that they do not plan to expand into other states at this time, but they will stay with the existing Association sponsored programs such as Arizona's.

Mr. Zaccaro reviewed in depth and with slides the details of why the 109% increase is needed. (A copy of the detailed report is on file.)

Mr. Jacobson reviewed the tremendous amount of activity relating to the malpractice problem going on all over the state by a wide variety of groups, including the legislature. It was pointed out that Representative Barr has assured us that legislation will be introduced as soon as his citizens committee has completed its work.

BOARD OF DIRECTORS

Meeting Days

It was reported that a majority of the Board of Directors voted to have subsequent regular meetings at 10:00 a.m. on Saturdays — Received.

A. H. Robins Award

It was moved and carried to award the A. H. Robins Award to Arnold H. Dysterheft, M.D. of Lakeside, Arizona.

BOMEX

It was moved and carried to recommend to the Governor the following names as candidates for appointment to the Board of Medical Examiners for a five-year term beginning July 1, 1975:

Albert Eckstein, M.D.
Monroe H. Green, M.D.
George Scharf, M.D.

1975 D. Rodman E. Sheen and Thomas G. Sheen Award

It was moved and carried to nominate Merlin K. Du Val, M.D. for the subject award.

AMA Councils and Committees

It was moved and carried to nominate the following members to the noted AMA organizations:

Council on Medical Education
Robert E. T. Stark, M.D.
Neal A. Vanselow, M.D.
Council on Long Range Planning
Seymour I. Shapiro, M.D.
Coordinating Council on Medical Education
Merlin K. Du Val, M.D.
Liaison Committee on Medical Education
William C. Scott, M.D.
Liaison Committee on Graduate Medical Education
Neal A. Vanselow, M.D.
Liaison Committee on Continuing Medical Education
Robert E. T. Stark, M.D.

Distinguished Service Award

It was moved and carried to nominate Solomon Cutcher, M.D. for the AMA Distinguished Service Award.

EXECUTIVE COMMITTEE

Classification changes approved:

(1) Cochise County Medical Society — Edward B. Grothaus, M.D., Active to Associate, Account Illness, Effective 1/1/75 — Dues Exempt.

(2) Maricopa County Medical Society
- a. R. W. Choice, M.D., Active to Associate, Account Retirement, Effective 1/1/75 — Dues Exempt.
- b. Allan A. Filek, M.D., New Associate, Account Retirement, Effective 1/1/75 — Dues Exempt.
- c. Frank D. Mann, M.D., Active to Associate, Account Retirement, Effective 1/1/75 — Dues Exempt.
- d. Lois G. McLean, M.D., Service — Request for Dues Exemption — Financial hardship — Effective 1/1/75.
- e. Jacob Reichert, M.D., Active to Active over 70, Account Age, Effective 1/1/75 — Dues Exempt.

(3) Mohave County Medical Society — Norman D. Duley, M.D., Active to Affiliate, Account Missionary Work, Effective 1/1/75 — Dues Exempt.

(4) Pima County Medical Society
- a. Oscar S. Koenig, M.D., Active to Active Over 70, Account Age, Effective 1/1/75 — Dues Exempt.
- b. Jack Klein, M.D., Active to Associate, Account Retirement, Effective 1/1/75 — Dues Exempt.
- c. Charles Kaplan, M.D., New Affiliate, Account Retired Out of State, Effective 1/1/75 — Dues Exempt.
- d. Milan K. Novak, M.D., New Affiliate, Account Teacher of Medicine, Effective 1/1/75 — Dues Exempt.

(5) Yavapai County Medical Society
- a. Mary D. McGuire, M.D., New Associate, Account Retired — Effective 2/22/75 — Dues Exempt.
- b. Samuel S. Clark, M.D., New Associate, Account Retired — Effective 2/22/75 — Dues Exempt.

AD HOC COMMITTEE TO REPEAL P.S.R.O.

It was moved and carried to accept the committee's recommendation that the committee be dissolved.

ARTICLES OF INCORPORATION AND BY-LAWS

It was moved and carried to introduce the following resolutions in the House of Delegates at its next meeting.

Resolution A-1-75

Introduced by: Board of Directors.

Subject: Physician Rehabilitation Committee — Chapter VII — Standing and Special Committees, Section 4 — Composition and Duties of Standing Committees.

RESOLVED, That Chapter VII, Section 4 be amended by adding:

(M) Physician Rehabilitation: — This committee shall consist of the Chairman and at least seven members with due consideration to geographic distribution and specialty representation.

The Committee shall be for the purpose of assisting physicians who have physical or emotional problems which may be affecting or impairing their proficiency in the practice and the quality of their medical or surgical activities. The Committee shall deal with each case and follow-up as appropriate.

Resolution A-2-75

Introduced by: Board of Directors.

Subject: Medical Economics Committee and Occupational Health Committee — Chapter VII — Standing and Special Committee, Section 4 — Composition and Duties of Standing Committees.

RESOLVED, That Chapter VII, Section 4 be amended to read:

(j) Medical Economics: — This committee shall consist of a Chairman and at least six members appointed on a geographic basis and with due consideration of the specialties and general practice. This committee shall deal with matters affecting the economic status of doctors of medicine. Sections will be set up within the committee and these may be enlarged as necessary. The purview of this committee shall include:

(1) Governmental Contracts; [: except those matters dealing with workmen's compensation;]

(2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;

(3) Organized Welfare and Charity Work;

(4) Retirement and Investments, including Group Investments for members.

(1) Occupational Health: — This committee shall consist of a Chairman and at least five members appointed on a geographic basis and with due consideration for the specialties and family practice. [The committee shall represent the association on all questions relating to medical relations under workmen's compensation.]

It shall also concern itself with improvement in industrial safety and the maintenance of good industrial health (rehabilitation) practices.

Resolution A-3-75

Introduced by: Board of Directors.

Subject: Solicitation for Office — Chapter V — Election of Officers and Members of the Board, Section 6 — Solicitation.

RESOLVED, That Chapter V, Section 6 be amended by deletion:

[Section 6. Solicitation: — Any person known to have sought for himself any office within the gift of this Association, shall be ineligible for any office for two years from the date of the offense.]

Resolution A-4-75

Introduced by: Board of Directors.

Subject: Housestaff Section — Chapter II — Membership, Section 3 (A) and Chapter VIII — House of Delegates, Sections 1, 2 & 3.

RESOLVED, That Chapter II, Section 3 (A) be amended to read:

(A) Active Members

All active members of all the county societies shall be active members of this Association. The minimum qualifications for active membership (other than for interns and residents) in a county society shall be that the individual must (1) hold the degree of doctor of medicine or its equivalent or doctor of osteopathy, (2) be an American citizen, or have made application for American Citizenship papers (in which case, he must make reasonable progress toward full citizenship or his membership shall lapse), (3) hold an unrevoked license to practice medicine and surgery or osteopathic medicine and surgery in the State of Arizona, (4) be a legal resident of the State of Arizona, (5) fulfill the continuing medical education requirements of the Arizona Medical Association. Subject to these minimum qualifications and to the provisions for loss of membership (Chapter II, Section 4), each county society shall be the exclusive judge of the qualifications of its members. Interns and residents who are licensed or registered with the Board of Medical Examiners, State of Arizona, are eligible for active membership in a county society. THESE MEMBERS SHALL CONSTITUTE THE MEMBERSHIP OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION.

Rights. An active member shall have all the rights and privileges of the Association as herein provided. Intern and resident active members shall pay ten per cent of the dues of other active members and will be exempted from special assessments.

RESOLVED, That Chapter VIII, Sections 1, 2 & 3 be amended to read:

Section 1. Composition of House; Meetings: — The House shall constitute the voting body of the Association and shall be composed of the elected Delegates of the county societies, elected delegates of each duly constituted chapter of the Student American Medical Association in Arizona, ELECTED DELEGATES OF THE DULY CONSTITUTED CHAPTER OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and the members of the Board. Delegates who are thereafter elected as officers do not by such election lose their status as voting Delegates in the House. The past presidents of the Association shall be ex-officio members of the House of Delegates without the right to vote.

The House shall meet at least once a year at the time of the Annual Meeting. In addition, special meetings of the House may be held at any time, upon at least six weeks notice thereof to the Delegates, at the call of the Board, or upon the call of twenty Delgates representing at least eight county societies.

Section 2. Number of Delegates: — Each county society shall be entitled to representation in the House by two Delegates, or their alternates, for the first twenty active members or fraction thereof, and one additional Delegate for each additional twenty active members or major fraction thereof, as determined on October first preceding the Annual Meeting.

Each duly constituted chapter of the ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION AND EACH DULY CONSTITUTED CHAPTER OF THE Student American Medical Association in Arizona shall EACH be entitled to representation in the House by two Delegates or their alternates.

Section 3. Election of Delegates; List Thereof: — Sufficiently in advance of the Annual Meeting each county society, THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and each duly constituted chapter of the Student American Medical Association in Arizona shall elect Delegates and an equal number of alternates to represent it in the House. In the absence of any Delegate his alternate may vote in his name on any question before the House. No alternate shall be eligible for election to office, but he may be appointed to membership on House committees in the absence of the Delegate. The secretary of each county society and OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION and each chapter of the Student American Medical Association shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting. Representation in the House shall be contingent upon compliance with this provision. A member to be seated must present evidence at the time of his appearance at the House, of his official election by his county society OR THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, or chapter of the Student American Medical Association.

Resolution A-5-75

Introduced by: Board of Directors.

Subject: AMA Board of Trustees — Chapter VI — Board of Directors, Section 1.

RESOLVED, That Chapter VI, Section 1 be amended to read:

Section 1. Members: — The Board shall be composed of the officers of the Association, AND ANY MEMBER OF THE ARIZONA MEDICAL ASSOCIATION WHO IS AN OFFICER OR TRUSTEE OF THE AMERICAN MEDICAL ASSOCIATION.

The following Resolutions (A-6-75 and A-7-75) were received for information:

Resolution A-6-75

Introduced by: Board of Directors.

Subject: Election of Officers and Members of the Board, Chapter V, Section 1. General; Qualifications: and Section 5. Nominations.

RESOLVED, That Chapter V — Elections of Officers and Members of the Board — Section 1. General; Qualifications: — be amended to read:

Section 1. General; Qualifications. — All elections for officers shall be conducted as a part of the business of the regular annual meeting of the House; shall be made by secret written ballot, and the candidates receiving a majority vote for a particular office shall be elected to that office. IN THE ELECTION OF DISTRICT DIRECTORS, ONLY DELEGATES FROM THEIR RESPECTIVE DISTRICTS SHALL BE ELIGIBLE TO VOTE. If no one of three or more candidates for a particular office shall receive a majority of the votes cast, the two with the highest number of votes shall be the candidates in a run-off election. If there are two candidates only and the vote is a tie, there shall be a run-off election. No person shall be eligible for election to office or to the Board who has not been a member of the Association for the preceding three years, and who was not a Delegate or Director at the time of his election. All officers and members of the Board shall serve until their successors are elected and have accepted the office. And be it further

RESOLVED, That Chapter V — Election of Officers and Members of the Board — Section 5. Nominations — be added to read:

NOMINATIONS MADE FROM THE FLOOR FOR THE OFFICE OF DISTRICT DIRECTOR MAY BE MADE ONLY BY DELEGATES FROM THE COUNTIES IN THEIR RESPECTIVE DISTRICTS.

Resolution A-7-75

Introduced by: Board of Directors.

Subject: Mandatory Membership in the American Medical Association.

WHEREAS, The complexity of the medical care delivery mechanism often places individual private practitioners at idealogical odds with local or national medical organizations; and

WHEREAS, Mandatory membership in both local and national medical organizations is contrary to the right of freedom of choice for the individual physician; and

WHEREAS, Mandatory membership in both local and national medical organizations obligates an individual physician to make financial contributions to an organization which may use those funds for purposes that are contrary to the philosophical beliefs of the individual contributor; therefore be it

RESOLVED, That the Arizona Medical Association make the following amendments to its bylaws:

CHAPTER II — Membership

Section 1. General Requirements, be amended to read:

An active member in good standing of a county society is automatically an active member of this Association, and, conversely, an active member in good standing of this Association must be an active member of a county society.

Any person, when he becomes a member, shall agree to abide by the Articles of Incorporation and Bylaws of this Association, and by any lawful changes which from time to time may be made. He further agrees to abide by the Code of Ethics as laid down by thhe American Medical Association as it now exists, or may hereafter be amended, *(and, be a member of that association.)*

Section 4. Loss of Membership, be amended to read:

(A) Active, Associate or Fifty-Year Club membership in this Association shall be lost by:

- (i) Final expulsion from the county society through which he is an active member of the Association.
- (ii) Transfer of membership to a county society of another state, and thereby to another state association, except as provided in Chapter III, Section 3.
- (iii) Voluntary resignation, which shall be without prejudice.
- (iv) Action of the House of Delegates (see Chapter VI, Section 6; Chapter VIII, Section 9).

(v) Revocation of the member's license to practice in Arizona. This latter clause shall effect immediate loss of membership as of the date of revocation.

(vi) Termination of Board of Medical Examiners registration of intern or resident active member. This latter clause shall take effect at the end of the calendar year.

((vii) Failure to maintain membership in good standing in the American Medical Association.)

(vii) Failure to pay Association dues and assessments within one year of the date such become payable, unless such failure be exempted under Chapter X, Section 5.

(viii) For active membership, failure to fulfill the continuing medical education requirements of the Arizona Medical Association elsewhere in the bylaws.

(B) Active, Associate or Fifty-Year Club membership in this Association shall be suspended by:

(i) Suspension of membership in the county society through which he is an active member of this Association.

(ii) Action of the Board (see Chapter VI, Section 6).

((iii) Suspension of membership in the American Medical Association, or)

(iii) Failure to pay the annual dues and assessments before the delinquency date.

(iv) For active membership, failure to submit satisfactory reports showing compliance with the continuing medical education requirements of the Arizona Medical Association.

All of the rights and privileges of membership shall be withheld during the period of suspension of membership.

(C) Service, honorary, student, and affiliate membership in this Association may be withdrawn upon a majority vote of the House after recommendation of the Board.

(D) The county society involved, and the Association, shall each notify the other of any change of status under these provisions for loss or suspension of membership.

(E) Any physician who may feel aggrieved by action of the society of the county in which he resides in refusing him membership, or in suspending, censuring, or expelling him, shall have the right to appeal to the Board, and IF HE OR SHE IS A MEMBER OF THE AMERICAN MEDICAL ASSOCIATION AND, if he so desires, further to the Judicial Council of the American Medical Association. Any physician suspended, or censured, by the Board, or expelled by action of the House, or any county society, which is a party to such appeal to the Board, may appeal such of these decisions, as the Judicial Council of the American Medical Association will accept, to the Judicial Council for review. In this event, the decision of the Judicial Council will be final. In the event the Judicial Council refuses to consider such an appeal, the decision of the Board, or the House, as the case may be, shall be final. In hearing appeals, the Board may admit such oral or written evidence as in its judgment will most fairly present the facts, but in the case of every appeal the Board as a Board and as individuals shall first make effort at conciliation and compromise.

CHAPTER V — Election of Officers and Members of the Board

Section 3. Terms of Office; Qualifications, be amended to read:

The following officers shall be elected for a one-year term: the President-elect, Vice President, Secretary, Treasurer, Speaker of the House, and Editor-in-Chief. The President and Past-President, though not elected as such, also have a one-year term.

The Delegate(s) and Alternate Delegate(s) to the American Medical Association shall be elected in accordance with the Bylaws of the American Medical Association. If the Association is entitled to more than one Delegate, not all terms shall run concurrently. ANY NOMINEE FOR DELEGATE(S) OR ALTERNATE DELEGATE(S) TO THE AMERICAN MEDICAL ASSOCIATION SHALL ALSO BE A MEMBER OF THE AMERICAN MEDICAL ASSOCIATION.

District Directors shall be elected for a term of three years.

CHAPTER IX — Dues and Assessments

Section 1. Fixing of Annual Dues; Payments, Reinstatements; Collections; Enforcement; be amended to read:

(a) The amount of annual dues shall be determined by the House at the Annual Meeting and shall include a subscription to the Journal. Any proposal to increase the annual dues shall be submitted to the Delegates at least six weeks prior to the Annual Meeting.

(b) The annual dues and the dues and assessments of the American Medical Association shall be payable January first of the year for which levied and shall be delinquent after February fifteenth of that year. The secretary of each county society shall collect and forward to the Association Secretary, the dues for its members, together with the dues and assessments levied by the American Medical Association, FOR THOSE PHYSICIANS WHO ARE ITS MEMBERS.

(c) Any member whose dues for the current year, or whose dues and assessments for the American Medical Association, have not been remitted to the Association Secretary on or before February fifteenth, shall stand suspended until such delinquency is corrected.

NOTE: All bracketed, italicized words represent deletions; all fully capitalized words are new material.

FINANCE COMMITTEE

Audit Report

The audit report for the year 1974 as prepared by Henry & Horne, Certified Public Accountants, was received as presented. (A copy is available at the Association offices).

Cash Flow Projection

Mr. Sherald Griffin, C.P.A., Henry & Horne, reviewed the cash flow projection prepared for the Finance Committee to assist them in preparing the budget for 1976. (A copy of the report is available at the Association's office) — Received.

1976 Budget — Resolution 2-85

It was moved and carried to approve the Finance Committee's recommendation to reduce our contribution to ArMPAC to $500, to establish the budget for the Governmental Services Committee at $5200.00 and to introduce Resolution 2-75 in the House of Delegates at its next meeting as follows:

Resolution 2-75

Introduced by: Board of Directors.

Subject: 1976 Calendar Year Budget of Income and Expense.

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1976 be adopted:

	Income	Expenditures	Contingency
General Operations	$422,550	$310,400	$112,150
Committee Operations	–0–	57,800	(57,800)
Annual Meeting	54,000	53,400	600
Publishing Operations	52,300	69,700	(17,400)
Building Operations	17,750	40.000	(22,250)
Benevolent & Loan Operations	4 500	2,000	2,500
TOTAL	$551,100	$533,300	$ 17,800

; and be it further

RESOLVED, That the annual dues of the Arizona Medical Association, Inc., be $180.00 for Active Members, with $170 going to General Operations Budget and $10 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Service member dues be $45.00, with $35 going to the General Operations Budget and $10 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Intern or Resident Active member dues be $18.00, with $8 going to the General Operations Budget and $10 going to the Publishing Operations Budget.

Council of Professions

It was moved and carried to defer the matter of membership in the subject organization to the November meeting of the Board of Directors.

Arizona Medicine

It was moved and carried to delete the recommendation that we poll the membership regarding continuation of **Arizona Medicine.**

Travel Policy

W. Scott Chisholm, M.D., recommended that we change our policy regarding reimbursement for travel. — No action.

Renting the Basement

It was moved and carried to approve the Finance Committee's recommendation that we seek a tenant for the basement and to approve the borrowing of funds to complete the area to suit the tenant.

Lease terms are to be at the discretion of the Executive Committee. Type of tenant, contractor, sign policy, etc. is at the discretion of the Executive Director.

Financial Statement Period Ending 1/31/75

The financial statement for the period ending 1/31/75 was received.

GOVERNMENTAL SERVICES COMMITTEE

Public Law 93-641

Dr. Scott reviewed the contents of Public Law 93-641 — The National Health Planning and Resources Development Act of 1974. Extensive discussion ensued.

It was moved and carried to hold a special Board of Directors meeting jointly with the Governmental Services Committee to start at 10:00 a.m. on Sunday, March 2, 1975 to develop our position on various aspects of this new statute.

LEGISLATIVE COMMITTEE

Dr. Sattenspiel reviewed the minutes of the Legislative Committee's meeting of 1/18/75.

It was moved and carried to accept and approve the actions of the Legislative Committee. (A copy of the detailed report is available at the Association's offices.)

Dr. Sattenspiel also reported on the success of the "Physician for a Day" program at the Arizona Legislature.

MATERNAL AND CHILD HEALTH CARE COMMITTEE

Dr. Dew reviewed the history of the Crippled Children's Services and its by Laws as they relate to staff privileges.

It was moved and carried to go on record to support the original statement which was tabled by the Board of Directors on 2/16/74. (See subsequent action.)

It was moved and carried to table the above motion and to refer the matter to the section on services to children for study and subsequent report back to the Board of Directors.

A.M.A. DELEGATES REPORT

Dr. Dudley's report of the A.M.A. meeting held November 30-December 4, 1974 was received as follows:

"Finances were the major topic of discussion at the clinical meeting. The Board of Trustees proposed a $90.00 dues increase; restriction of publications and elimination of advertising. All of this predicated on the basis that the AMA had been deficit financing for a period of five years and its cash reserves were depleted. Additionally advertising is not an income producing item but, controwise, a cost to the Association. By the end of 1974 the Association will be three million dollars in debt on a cash flow basis.

"Committee F of the House held extensive hearings on this matter and the House subsequently passed a mandatory special assessment of $60.00 for all AMA members, excluding students, interns and residents. Additionally Committee F was to study the finances of the Association and bring back a proposal at the Annual structures meeting in June regarding a dues increase. In the interim all committee structures are to be kept on a holding basis and existing committees are not to be disbanded as per the Board of Trustees recommendations.

"Additionally the House rejected the proposal that Armpac-Ampac be absorbed within a new Committee on Legislation. They agreed that Ampac could move into AMA headquarters but should be a separate and distinct organization.

"Students and house staff were very active at the Clinical meeting. Before the Arizona and Rocky Mountain caucus they 'demanded' certain liberties respecting their own representation. At one point during the meeting the House staff threatened to withdraw from the AMA but when the House acted favorably on a number of their recommendations they returned to the floor.

The points they won are as follows:

> "That the elected Executive Committee of the Intern and Resident Business Session assume advisory responsbilities of the Committee on Housestaff Affairs, which will be dissolved; that programs and priorities of the Department of Housestaff affairs be developed annually by the Department Director and the Chairman of the I & R Business Session, subject to review and approval of the Board of Trustees; and that responsibility for the editorial content of the Housestaff Newsletter and for the ditsribution of I & R Business Session reports be exercised by the Session's Executive Committee subject to appropriate approval and review in keeping with Association policies.

"The Board of Trustees were directed to give priority attention to AMA members and State Societies in the event their professional liability insurance is not renewed.

"Beginning in 1977 there will be a separation of the Fall business meetings of the House and Scientific Sessions. Scientific meetings will be held at times and places selected by the Board.

"Due process was discussed. This related in part to Doctor Earl Peacock of Tucson. The House was not satisfied with the Report of the Judicial Council and referred the Report back to the Council for further study.

"The House adopted a report of the Judicial Council which cautions that the payment of bonuses to Physicians and pre-paid health care plans, such as HMOs, for minimizing the utilization of services may interfer with the physician's obligations to his patients.

"The House took a strong position against 'weight reduction clinics' and the use of Chorionic or non-gonodotrophic hormone.

"The House also adopted a policy which said that acupunctures should only be performed in research settings by a physician or under the direct supervision of a physician. As an aside, it is interesting to note that Arizona is the only state that has developed regulations regarding the use of acupuncture within the state. This has been through the cooperation of the Board of Medical Examiners and the Arizona Medical Association."

Mr. Daniel Fast, Medical Student, report was received as follows:

"First, I should like to express my gratitude at being invited to accompany you on your recent journey to Portland for the Clinical Convention of the American Medical Association this past November 30 through December 4. This was the first such national high-level meeting I had attended, outside of the Annual Convention of the Student American Medical Association in Dallas last March. It was most intriguing to observe the mechanisms of political, legislative, medical, and ethical concerns amalgamating themselves in the reference committees and on the floor of the House of Delegates itself.

"I also attended the Clinical exhibits, perusing as much and as many of the booths as possible. I did not get to sit in on any of the postgraduate courses (I'm not sure if tickets of admission were required for those) although I did listen in at three or four for a few minutes each. Needless to say, I have a lot of reading to do with all those pamphlets that managed to find their way into my hands.

"Enclosed is an accounting of my expenses and a check to reimburse you for the unspent portion of the $400.00 advanced. My expenses were minimal, I believe largely due to the abundance of complimentary meals and also to the fact I was so busy running around most days. I also had a chance to look up some very dear friends of the family from my days in Portland some 22 years ago.

"I'm glad I finally was able to meet some of the members of the ArMA and hope that we will be able to get together as well in the future. I was also able to meet with some of the student leaders from SAMA and the AMA Student Business Session as well as the various Housestaff leaders.

"Once again, thanks so very much for the opportunity of attending the recent convention."

CORRESPONDENCE

Woman's Auxiliary letter 1/19/75

The letter from Mrs. Howard W. Kimball, President-Elect of the Woman's Auxiliary to ArMA thanking the Association for its financial assistance was received.

Coconino County Medical Society letter 1/25/75

The subject letter expressing opposition to an AMA dues increase was received.

OTHER BUSINESS

ABC-HMO

Dr. Hoffman reviewed the matter of the telephone directory listings showing the ABC-HMO under "Blue Cross-Blue Shield Plans." Mr. John C. Foster reported that they had been placed in error and that the person who placed the order has been fired. The listings would be corrected when the new directories are published. — No action.

Resolution 3-75

The following resolution submitted by the Yuma County Medical Society was received for information:

Introduced: Board of Directors.

Subject: Limit for Medical Liability Lawsuits.

WHEREAS, Physicians in our county have recently been advised by their professional liability insurer of annual increase in insurance cost in excess of 500% (specifically, a rate change from $2,850.00 to $14,956.00); and

WHEREAS, The result of such increase is that some of our physicians will continue to practice without insurance, some will retire at an early age, and some plan to enter salaried or industrial positions, and the balance have no choice except to increase their fees to cover the increased insurance charges; and

WHEREAS, This society declares such increased insurance cost to interfere significantly with our desire to provide our patients with the highest possible quality of medical care at reasonable expense; and

WHEREAS, It is the purpose of this society to provide quality medical care at a reasonable expense to our patients and that this purpose can now only be accomplished by prompt action of our State Legislature, which action is expressly requested by this resolution; therefore be it

RESOLVED, That the Arizona State Legislature be requested by the Arizona Medical Association to establish a limit of $1,000,000.00 or less upon any medical liability suit.

ArMA Foundation

Mr. Robinson reported that the Arizona Medical Association Foundation had received a contribution from Drs. Edward A. Brewer, George Phares, Patricia Ryan, and Robert Fox in the amount of $1,923 to be used for scholarships to medical students committed to a career in family practice. Letters of thanks have been written.

Resolution 4-75

The following resolution submitted by 34 members of the Association was received for information:

Subject: Section for Collective Bargaining and Political and Economic Representation.

WHEREAS, National and State governments are becoming controllers of health care practices and costs; and

WHEREAS, the physicians of Arizona and the United States are placed increasingly in the position of being dictated to rather than listened to as regards these policies; and

WHEREAS, Collective action is our only reasonable recourse to governmental direction and restriction; therefore be it

RESOLVED, That the Arizona Medical Association designate or create a section for collective bargaining and political and economic representation; and be it further

RESOLVED, That the Arizona Medical Association approach each member for the legal right to collectively bargain for him; and be it further

RESOLVED, That the Arizona Medical Association's delegates to the American Medical Association House of Delegates introduce a like resolution in that body at their next session.

Meeting adjourned 3:26 p.m.

William E. Crisp, M.D.
Secretary

MEDICAL ECONOMICS COMMITTEE

The meeting of the Medical Economics Committee of the Arizona Medical Association, Inc., held March 1, 1975 at 810 West Bethany Home Road, Phoenix, Arizona, convened at 12:26 p.m. William C. Scott, M.D., President-Elect presiding.

MINUTES

The minutes of the meeting held November 2, 1974 were approved as distributed.

MEMBERSHIP BENEFIT INSURANCE PROGRAM

Dr. Scott introduced George B. Littlefield and Charles DeLeeuw who reviewed the following programs.

Life Insurance Program

Number of policies = 261
Number of dependent riders = 100
Coverage as of 12/31/74 = $3,265,000.00
Premium Paid for 1974 = $44,924.00
Claims Paid 1973 — = 7 for $56,000.00 — 1974 = 3 for $35,000.00

Defendants Reimbursement

Number of policies = 148
Premium for year ending 2/15/75 = $4,400.00

Accidental Death Plan

Number of policies = 48 including 16 spouses
Premium for year ending 3/1/75 = $2,655.00

It was moved and carried to agree to the change to Nationwide Insurance Company from the present underwriter, National Casualty Company.

Income Protection Plan

Number of Policies = 915
Premium for 1974 = $139,071.00
Claims paid for 1974 = $118,994.00
Loss Ratio for 1974 = 85.6%
Waiver of Premiums = 12

It was moved and carried to approve the requested changes in the program as outlined below:

1. Increase basic coverage $100 a month for all presently insured members, under age 60, without evidence of insurability with appropriate rate adjustments.
2. Offer $400 a month on a non-selective basis for all present and future new members, under age 65 on the date of application.
3. Offer a choice of waiting periods: Plan I, 1st day accident and 8th day sickness: Plan II, 30-day waiting period accident or sickness: Plan III, 60-day waiting period accident or sickness: Plan IV, 90-day waiting period accident or sickness; or a combination of these waiting periods, all provided in the same policy.
4. Continue monthly benefits from $400 to $1500 for the basic coverage.
5. Offer with Plan I, 1st and 8th day coverage, sickness benefits to begin with the 1st day of hospital confinement or the 8th day of total disability, whichever occurs first.
6. Offer with Plan I, 1st and 8th day coverage, a 100% increase in monthly benefits while hospital confined, up to 60 days during any one disability . . . sickness or accident claims.
7. Offer a renewal of $600 per month on the first anniversary of the master policy following the 65th birthday of the insured to age 70, and $300 monthly, age 70 and over. (Present maximum $400 at age 65 and renewed to age 70).

The proposed semi-annual premiums for $100 a month for the four plans are:

	under 30	30-34	35-39	40-44	45-49	50-59	60-64	65-69	70 & over
1st-8th	7.50	10.00	13.50	15.00	19.00	27.50	32.00	40.00	40.00
30-30	5.25	7.00	9.45	10.50	13.30	19.25	22.40	28.00	28.00
60-60	4.70	6.25	8.45	9.40	11.90	17.20	20.00	25.00	25.00
90-90	4.15	5.50	7.45	8.25	10.45	15.15	17.60	22.00	22.00

Present semi-annual rates for present plan, per $100 a month are:

Through 34	35-39	40-49	50-59	60-64	65-69	70 & over
14.60	16.01	18.31	24.15	31.21	38.28	—

8. Eliminate the accidental death and dismemberment benefit.
9. Include coverage for private flying, pilot or passenger, on all plans with no additional premium.
10. Offer open enrollment for basic benefits of $400, all members under age 45, nonselective additional indemnity to $1500 subject to evidence of insurability.

The company proposes no change in the extended coverage plan at this time other than to provide this benefit as part of the single policy which would be issued in lieu of a separate extended policy, as is now provided.

The new single policy would bear a current date but the company's records would indicate the original date of issue for each member. Presently disabled members will not be offered the new benefits until they have recovered from their disability and returned to work for a period of 30 days. Written request for reinstatement may then be made between the 30th and 60th day following return to active practice.

It was further requested that the descriptive literature and the policy define the practice of medicine by specialty.

WORKMEN'S COMPENSATION

William R. Jones, Jr.'s letter of 12/10/74 was reviewed. It was determined that this matter more properly belongs before the Occupational Health Committee and was referred to that committee.

INSURANCE COMMITTEES AND FEES

Robert J. Oliver, M.D. letter 11/22/74

Dr. Oliver's letter regarding activities of insurance committees and the possibility of fee setting. It was pointed out this matter is presently before the major county societies. — Received for information.

Assistant Attorney General letter 11/4/74

The subject letter regarding the relationship between the Sherman Act and use of relative value schedules was reviewed and discussed. — Received for information.

UNIONS AND PHYSICIANS

Responses to our letters to the Presidents of the Medical Associations of Illinois, New York, Ohio, Pennsylvania, Washington and West Virginia regarding relationships with unions were reviewed. — No action.

Resolution 4-75

Dr. Switzer reviewed the following resolution that will be introduced in the House of Delegates in April.

Subject: Section for Collective Bargaining and Political and Economic Representation.

WHEREAS, National and State governments are becoming controllers of health care practices and costs; and

WHEREAS, The Physicians of Arizona and the United States are placed increasingly in the position of being dictated to rather than listened to as regards these policies; and

WHEREAS, Collective action is our only reasonable recourse to governmental direction and restriction; therefore be it

RESOLVED, That the Arizona Medical Association designate or create a section for collective bargaining and political and economic representation; and be it further

RESOLVED, That the Arizona Medical Association approach each member for the legal right to collectively bargain for him; and be it further

RESOLVED, That the Arizona Medical Association's delegates to the American Medical Association House of Delegates introduce a like resolution in that body at their next session.

Considerable discussion ensued especially regarding whether or not the Arizona Medical Association can legally act as a labor union.

It was moved and carried to ask for a legal opinion as to whether or not the Association can function as a collective bargaining agent for its members.

MEDICAL SERVICES RELATIVE VALUE GUIDE

Dr. Moraca reviewed the development of a Medical Services Relative Value Guide that incorporates the excellent communications services of the 1969 and 1974 CRVS while utilizing a system of relativity points that are consistent throughout the various sections. Received.

UNIFORM HEALTH INSURANCE CLAIM FORM

The Chairman reviewed the letters from Blue Cross/Blue Shield and the Part B Intermediary stating that they will accept the new (June 74) version of the subject form. Received.

OTHER BUSINESS

Mr. Robinson reported that we had requested the membership to report all substantiated cases of patients who experienced fraud in purchasing health insurance policies. To date, no responses have been received. Received.

Meeting adjourned at 3:20 p.m.

William E. Crisp, M.D.
Secretary

JOINT MEETING OF BOARD OF DIRECTORS AND GOVERNMENTAL SERVICES COMMITTEE

The joint meeting of the Board of Directors and the Governmental Services Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Sunday, March 2, 1975, a quorum being present, convened at 10:00 a.m., William G. Payne, M.D., President, presiding.

Public Law 93-641 — National Health Planning and Resources Development Act of 1974

Dr. Payne pointed out that the purpose of today's meeting is to establish hthis Association's position, if any, as it relates to various aspects of P.L. 93-641.

Dr. Scott reviewed the general sections of the law in conjunction with a slide presentation.

Dr. Manley presented his thoughts on the constitutionality, effects on quality health care, fiscal responsibility, local and state authority vs. federal authority and the possible punitive aspects of the statute.

Mr. Melick reported that the Arizona Regional Medical Program favors one Health Service Agency for the state.

Extensive discussion and debate ensued on many aspects of what the Association's position should be regarding P.L. 93-641.

Actions of Joint Committee and Board of Directors

It was moved and carried to ask legal counsel to familiarize himself with Public Law 93-641 with the purpose of answering the following questions:

1. Is it constitutional?
2. Will it have an adverse effect on the quality of health care in Arizona?
3. Is it fiscally responsible?
4. Local and state authority vs. federal control.
5. What would be the penalty to physician members of ArMA if they chose not to comply with the statute?

It was recommended that the Arizona Hospital Association be invited to join us in the legal investigation of P.L. 93-641.

It was moved and carried that the Association recommend withholding positive implementation in Arizona of P.L. 93-641 until such time as more experience is available from the six demonstration states.

It was moved and carried that the joint committee wishes to express our grave concern about this law as to its constitutionality, fiscal responsibility, assurance of quality medical practice, and retention of local and state control; however, if it is implemented and an area designation is required, the joint committee would recommend to the Governor that the State of Arizona be considered as a single unit for purposes of implementation of this legislation.

At this point in the meeting the question of a quorum was challenged. The president ruled that quorum of the Board of Directors was not present and therefore all actions are recommendations to the Board.

It was moved and carried to recommend to the Executive Committee that they consider polling the Board of Directors, as to whether the Association should support the concept of having one health service area encompassing the entire state of Arizona which would include a preamble that the Association has great concern over the constitutionality, adverse effect on quality of health care, fiscal responsibility and possible punitive aspects of non-compliance with P.L. 93-641. Should the board member vote in the negative on the above motion, he is to be asked to vote on the proposition of having two health service areas or whether just the preamble should be forwarded to the Governor.

House Bill 2304

It was moved and carried to take "no action" with regard to H.B. 2304.

Meeting adjourned 2:39 p.m.

William E. Crisp, M.D.
Secretary

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

GOOD SAMARITAN HOSPITAL, PHOENIX
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

PRESCOTT VETERANS ADMINISTRATION CENTER CONTINUING MEDICAL EDUCATION PROGRAM

1:30 p.m., Bldg. 28, V.A. Center, Prescott, AZ

April 17 — Medical Grand Rounds
April 24 — Neurology Conference

Approved for 1½ required hours per session toward the ArMA Certificate in Continuing Medical Education.

SCIENTIFIC ASSEMBLY IN TROPICAL INTERNATIONAL HEALTH (II)

4/1/75 - 5/8/75
Tues. & Thurs., 7:30-9 p.m. 12 sessions
Arizona Medical Center, Tucson, AZ

SPONSOR: Dept. of Family & Community Medicine, Arizona Medical Center

CONTACT: Andrew W. Nichols, M.D.
Dept. of Family & Community Medicine
Arizona Medical Center
Tucson, AZ 85724

Approved for 18 required hours toward the ArMA Certificate in Continuing Medical Education.

ANESTHETIC MANAGEMENT OF RARE BIOCHEMICAL DISEASES

April 15, 1975
Smugglers Inn, Phoenix, AZ

SPONSOR: Maricopa County of Anesthesiologists

CONTACT: I. Sell, M.D.
217 E. Virginia
Phoenix, AZ 85004

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

THE MANIC PATIENT

April 18, 1975
Arizona State Hospital, Phoenix, AZ

SPONSOR: Arizona State Hospital

CONTACT: Eli Schlossberg, R.Ph.
2500 E. Van Buren St.
Phoenix, AZ 85008

Approved for 3 required hours toward the ArMA Certificate in Continuing Medical Education.

ARIZONA MEDICAL ASSOCIATION 84TH ANNUAL MEETING

April 22-26, 1975
Braniff Place Hotel and Tucson Community Center
Tucson, AZ

SPONSOR: Arizona Medical Association and Northwestern University

CONTACT:
Donald J. Ziehm, M.D.
Program Director
Arizona Medical Association
810 W. Bethany Home Rd.
Phoenix, AZ 85013

Approved for 14½ required hours toward the ArMA Certificate in Continuing Medical Education.

THE TREATMENT OF DRUG ABUSE

April 25 and 26, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: University of Arizona College of Medicine

CONTACT: Kenneth S. Russell, Ed.D.
Department of Pharmacology
U of A, College of Medicine
Tucson, AZ 85724

Approved for 8½ required hours toward the ArMA Certificate in Continuing Medical Education.

VECTORCARDIOGRAPHY — A BASIC WORKSHOP

April 30-May 2, 1975
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: American College of Cardiology, Institute for Cardiovascular Diseases, Good Samaritan Hospital

CONTACT:
Alberto Benchimol, M.D.
Institute for Cardiovascular Diseases
1033 E. McDowell Rd.
Phoenix, AZ

RECENT CLINICAL ADVANCES IN DIABETES MELLITUS

May 10, 1975
U of A College of Medicine, Tucson, AZ

SPONSOR: Tucson Chapter, American Diabetes Association

CONTACT: Alfred E. Stillman, M.D.
2122 North Craycroft Road
Tucson, AZ 85712

Approved for 7 required hours toward the ArMA Certificate in Continuing Medical Education.

HYPERTENSION WORKSHOP

May 15, 1975
Little American Motel, Flagstaff, AZ

SPONSOR: Coconino County Medical Society

CONTACT: Joseph H. Reno, M.D.
120 West Fine Ave.
Flagstaff, AZ 86001

Approved for 4 required hours toward the ArMA Certificate in Continuing Medical Education.

TENTH ANNUAL MEETING ROCKY MOUNTAIN NEUROSURGICAL SOCIETY

June 8-11, 1975
Cozumel Island, Yucatan Peninsula, Mexico

June 12-13, 1975
Post Convention Seminars, Pan-American Hotel
Merida, Yucatan Peninsula, Mexico

SPONSOR: Rocky Mountain Neurosurgical Society

CONTACT: Richard H. Moiel, M.D., Secretary
Rocky Mountain Neurosurgical Society
601 Medical Towers, 1709 Dryden St.
Houston, Texas 77025

PHYSICIANS TRAINING PROGRAM AS PART OF ARTHRITIS SERVICES PROGRAM

July 1, 1974 - June 30, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: Arizona Medical Center and
Arthritis Services Program

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ., Rm. 8403

SPONSOR: Department of Psychiatry, U of A
College of Medicine

CONTACT: Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ hours per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of
Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS MEDICAL & SURGICAL

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Departments of Medicine, Family Practice, and Surgery

CONTACT: Jack D. Nestor, M.D.
Clinical Laboratory
1601 W. St. Mary's Rd.
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

REVIEW COURSE IN INTERNAL MEDICINE

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

Weekly on Wednesdays, 5 p.m.-6:30 p.m.
at participating Hospitals listed below
February 5 - June 4, 1975

SPONSOR: Departments of Medicine, Good Samaritan Hospital, Maricopa County General Hospital and St. Joseph's Hospital

CONTACT: D. J. Crosby, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

PHOENIX PSYCHIATRIC COUNCIL CONTINUING EDUCATION PROGRAM

September 1974 — May 1975

SPONSOR: Phoenix Psychiatric Council

CONTACT:
Robert H. Barnes, M.D.
525 N. 18th St.
Phoenix, AZ 85006

Approved for required hours per session toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS 4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St. Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

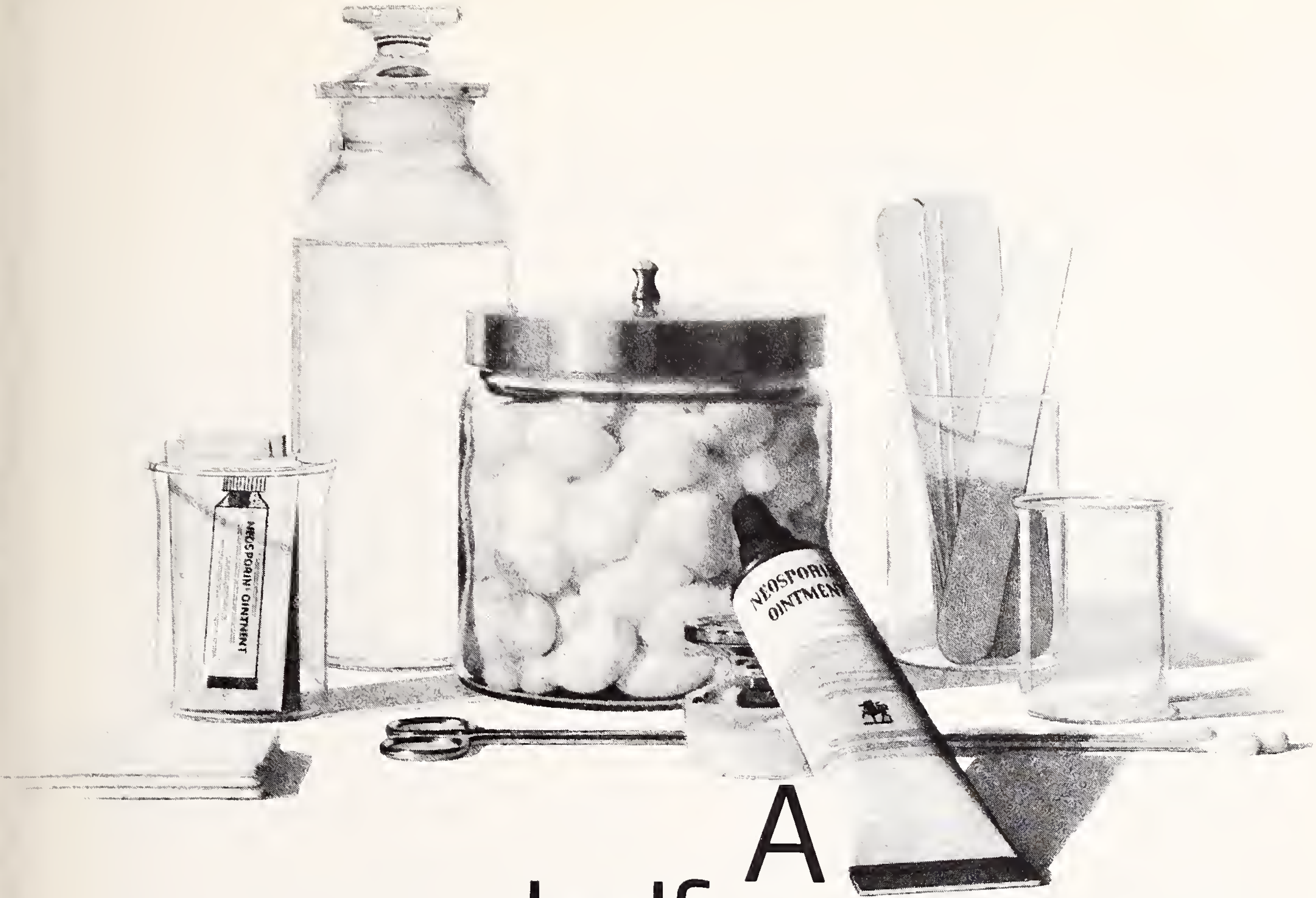
PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.



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INDICATIONS: *Therapeutically,* used as an adjunct to appropriate systemic therapy for topical infections, primary or secondary, due to susceptible organisms, as in: • infected burns, skin grafts, surgical incisions, otitis externa • primary pyodermas (impetigo, ecthyma, sycosis vulgaris, paronychia) • secondarily infected dermatoses (eczema, herpes, and seborrheic dermatitis) • traumatic lesions, inflamed or suppurating as a result of bacterial infection.

Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

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Research Triangle Park
North Carolina 27709

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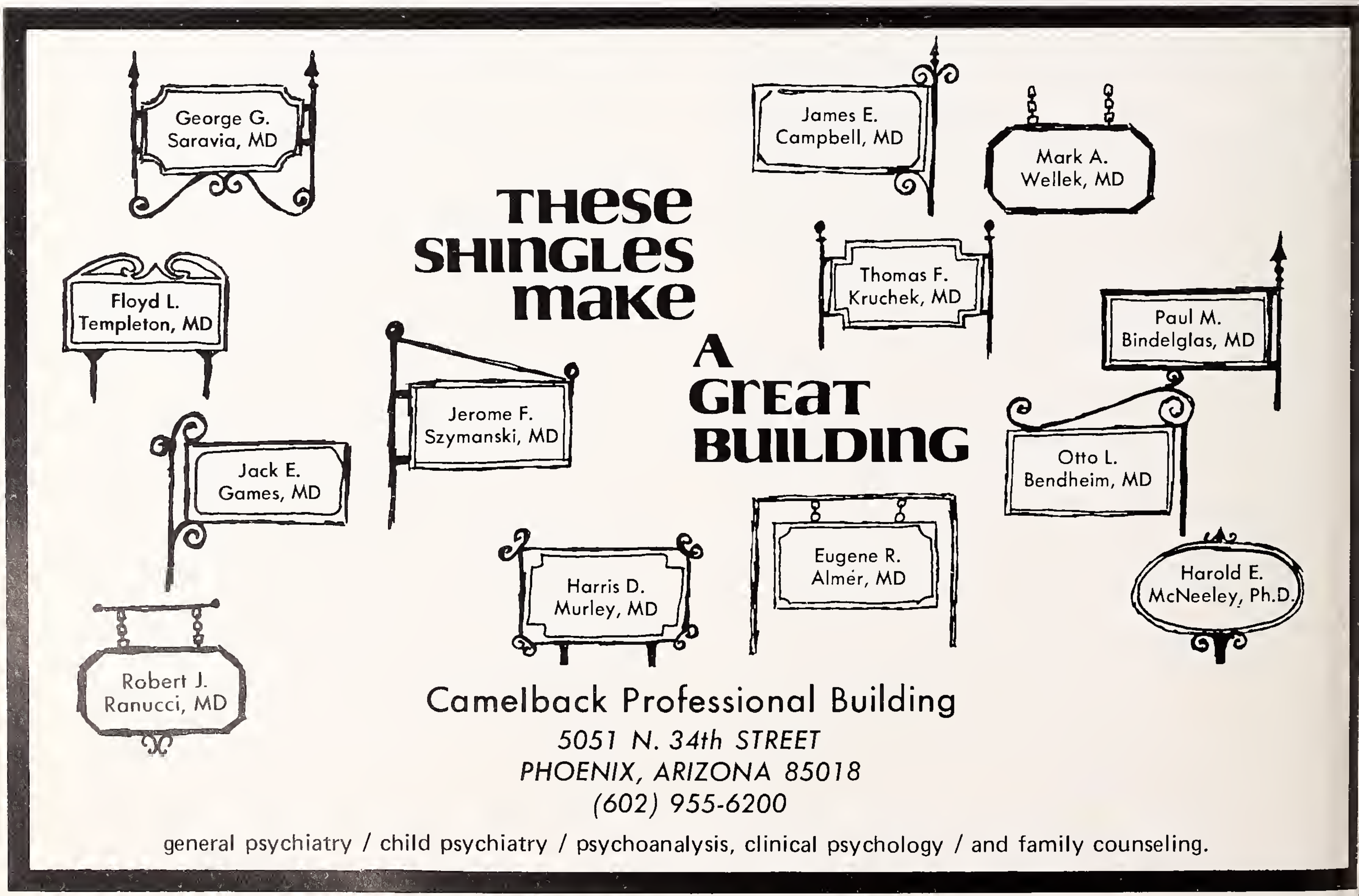

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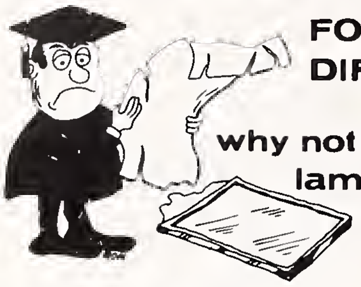

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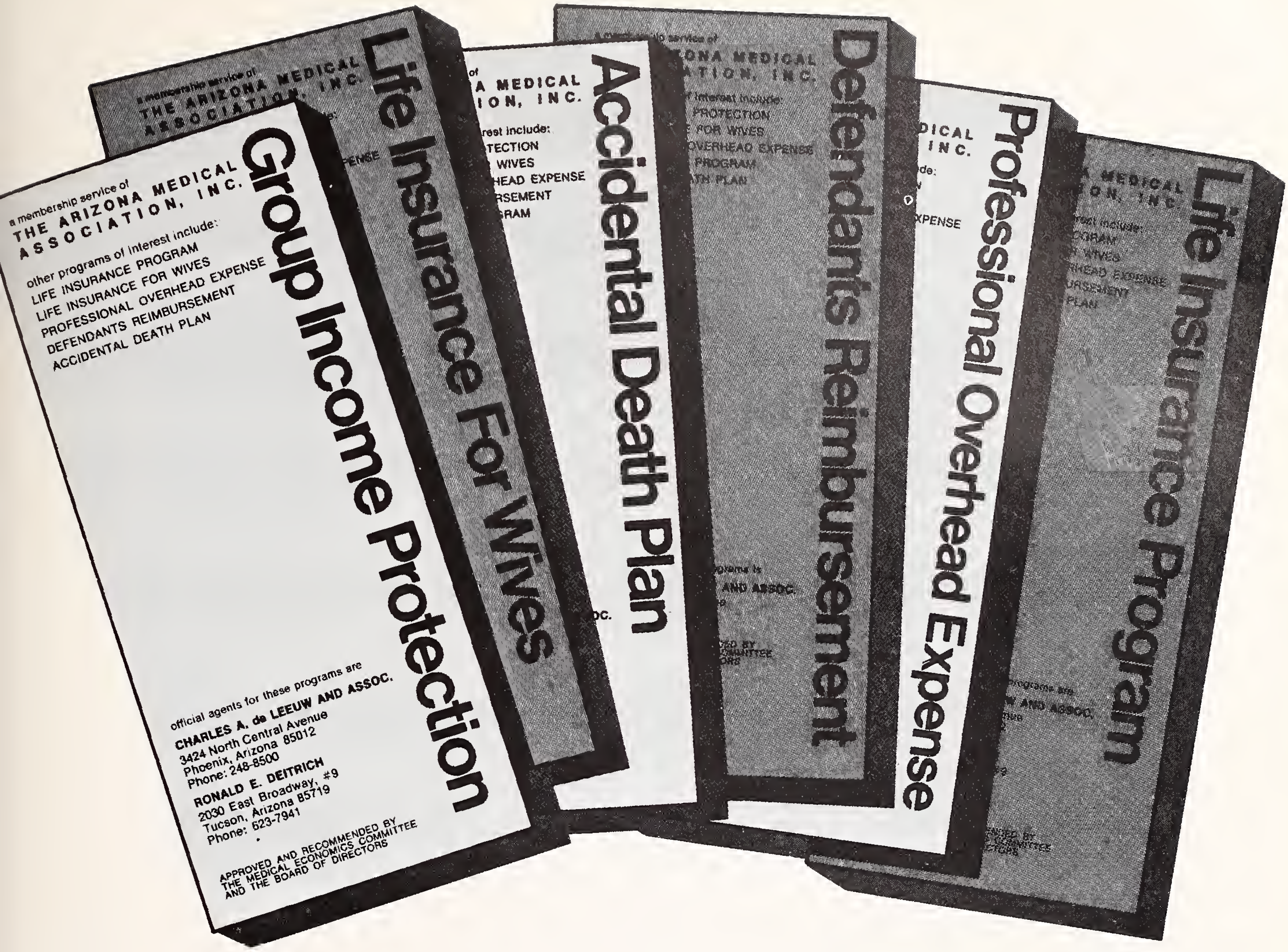

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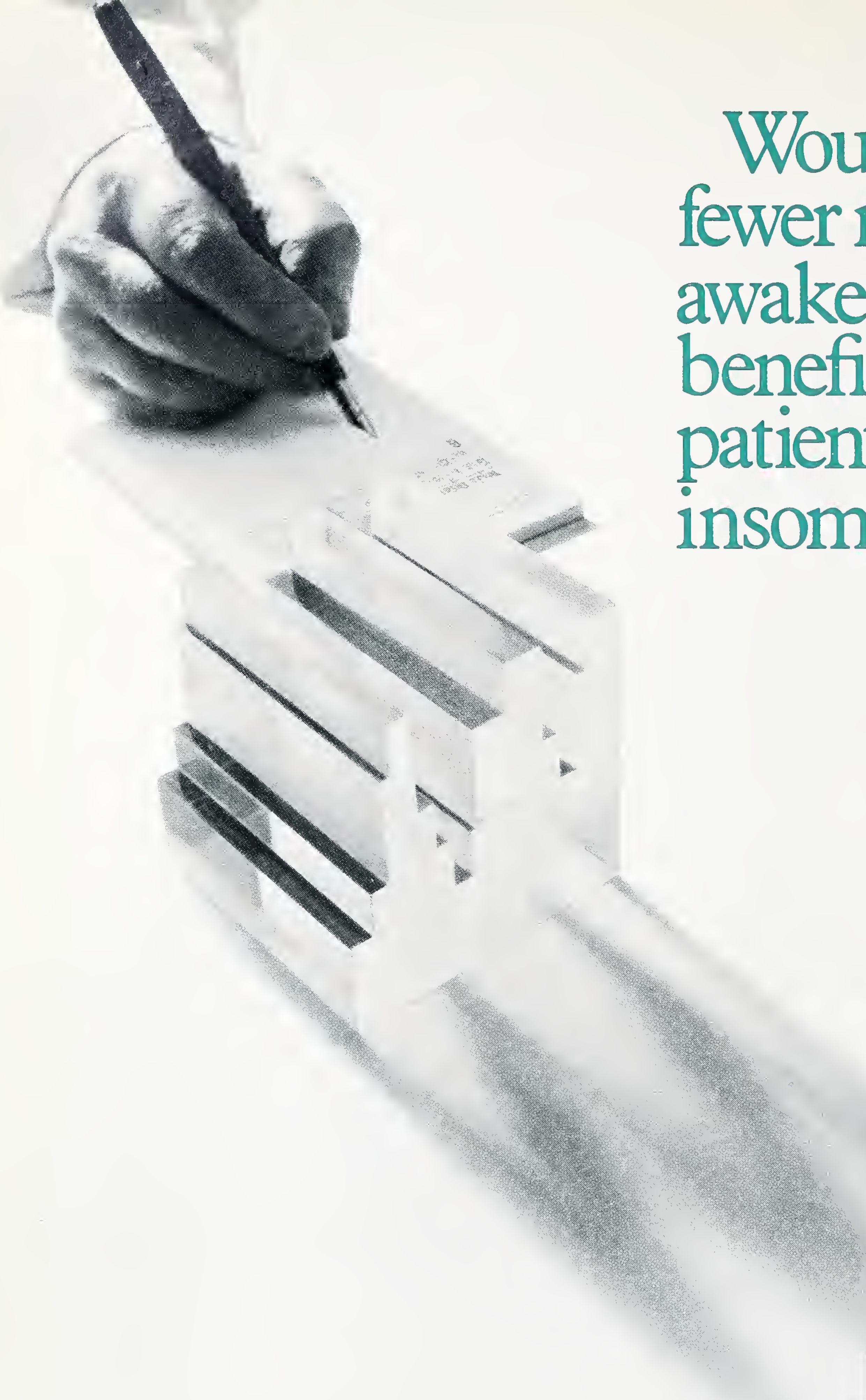
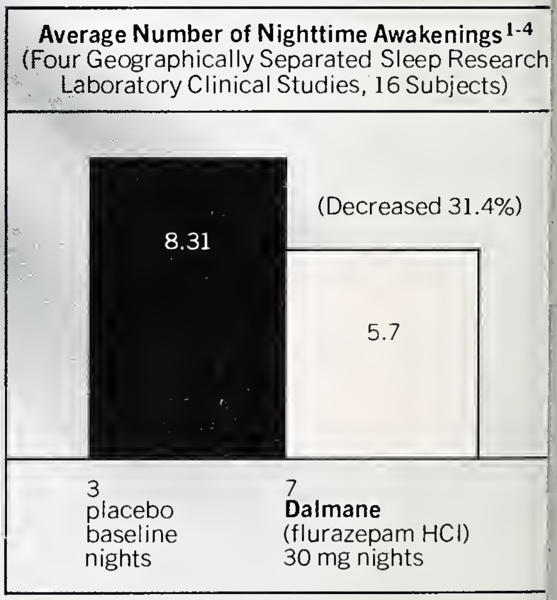


Would sleep with fewer nighttime awakenings benefit your patients with insomnia?

Highly predictable results for your patients with trouble staying asleep…

…can be obtained with Dalmane (flurazepam HCl). As shown below, Dalmane significantly reduces nighttime awakenings:[1-4]



And for those with trouble falling asleep or sleeping long enough…

…Dalmane (flurazepam HCl) also delivers excellent results. Clinically proven in sleep research laboratory studies: on average, sleep within 17 minutes that lasts 7 to 8 hours.[5]

Dalmane (flurazepam HCl) is relatively safe, seldom causes morning "hang-over"...

…and is well tolerated. The usual adult dosage is 30 mg *h.s.*, but with elderly and debilitated patients, limit the initial dose to 15 mg to preclude oversedation, dizziness or ataxia. Evaluation of possible risks is advised before prescribing.

REFERENCES:
1. Karacan I, Williams RL, Smith JR: The sleep laboratory in the investigation of sleep and sleep disturbances. Scientific exhibit at the 124th annual meeting of the American Psychiatric Association, Washington DC, May 3-7, 1971
2. Frost JD Jr: A system for automatically analyzing sleep. Scientific exhibit at the 24th annual Clinical Convention of the American Medical Association, Boston, Nov 29-Dec 2, 1970; and at the 42nd annual scientific meeting of the Aerospace Medical Association, Houston, Apr 26-29, 1971
3. Vogel GW: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ
4. Dement WC: Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ
5. Data on file, Medical Department, Hoffmann-La Roche Inc., Nutley NJ

Before prescribing Dalmane (flurazepam HCl), please consult complete product information, a summary of which follows:

Indications: Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; and in acute or chronic medical situations requiring restful sleep. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended.

Contraindications: Known hypersensitivity to flurazepam HCl.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Use in women who are or may become pregnant only when potential benefits have been weighed against possible hazards. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated, initial dosage should be limited to 15 mg to preclude oversedation, dizziness and/or ataxia. If combined with other drugs having hypnotic or CNS-depressant effects, consider potential additive effects. Employ usual precautions in patients who are severely depressed, or with latent depression or suicidal tendencies. Periodic blood counts and liver and kidney function tests are advised during repeated therapy. Observe usual precautions in presence of impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported were headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins and alkaline phosphatase. Paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity, have also been reported in rare instances.

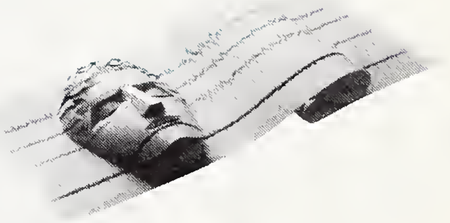
Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

Depend on highly predictable results with

Dalmane®
(flurazepam HCl)

One 30-mg capsule *h.s.*— usual adult dosage (15 mg may suffice in some patients).
One 15-mg capsule *h.s.*— initial dosage for elderly or debilitated patients.



specifically indicated for insomnia

Objectively proved in the sleep research laboratory:
- **sleep with fewer nighttime awakenings**
- **sleep within 17 minutes, on average**
- **sleep for 7 to 8 hours, on average,**

with a single *h.s.* dose.

ROCHE

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

In most cases of sustained moderate hypertension,

ALDOMET® (METHYLDOPA|MSD)

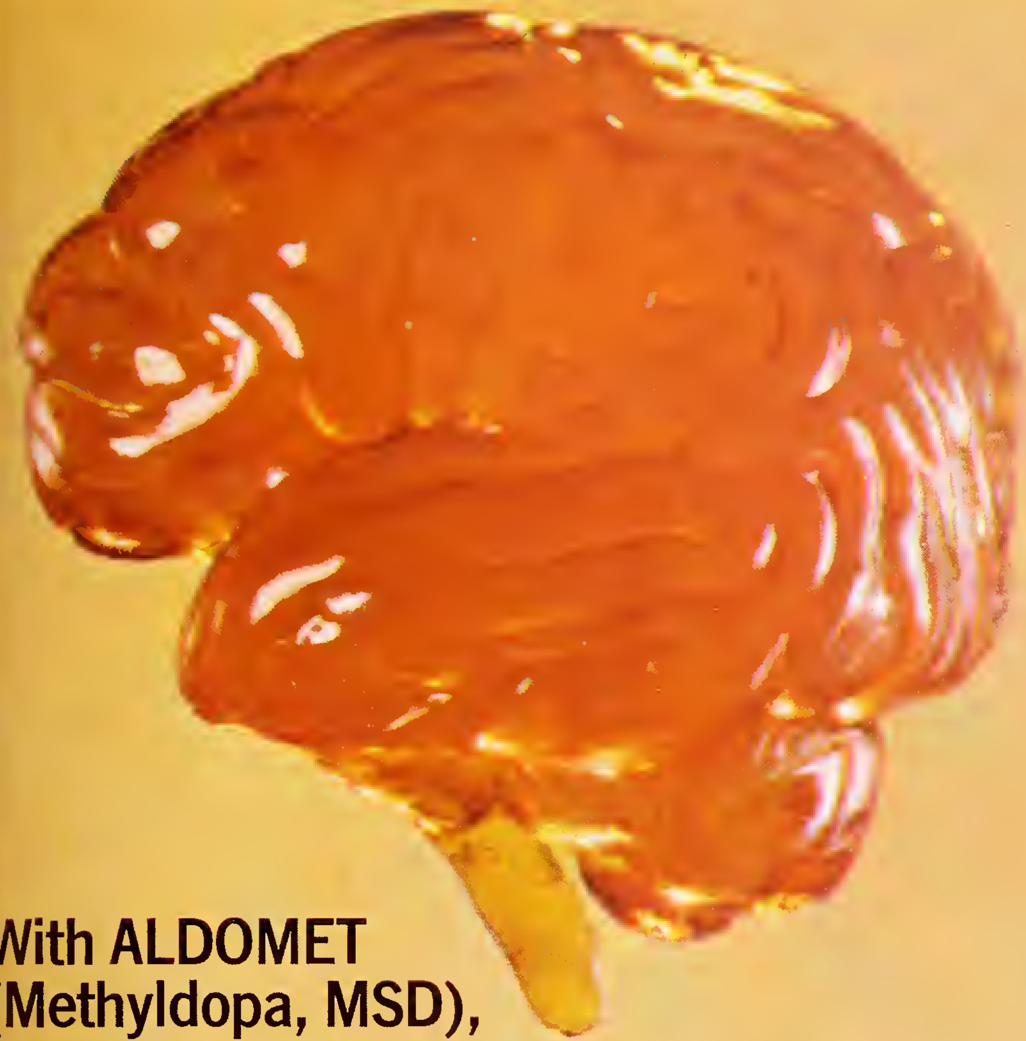
usually offers more than effective lowering of blood pressure...

With ALDOMET (Methyldopa, MSD), existing renal function is usually unchanged

ALDOMET has no direct effect on renal function. When used in effective doses, ALDOMET usually does not reduce glomerular filtration rate, renal blood flow, or filtration fraction.

With ALDOMET (Methyldopa, MSD), cardiac output is generally unchanged

ALDOMET has no direct effect on cardiac function. When ALDOMET is used in effective doses cardiac output is usually maintained with no cardiac acceleration; in some patients the heart rate is slowed.



With ALDOMET (Methyldopa, MSD), symptomatic postural hypotension is infrequent

ALDOMET reduces both supine and standing blood pressure. Less frequent symptomatic postural hypotension is experienced with ALDOMET than with many other antihypertensive agents. Exercise hypotension and diurnal blood pressure variations rarely occur.

for sustained moderate hypertension

TABLETS, 250 mg and 500 mg

ALDOMET®
(METHYLDOPA|MSD)

NATIONAL HIGH BLOOD PRESSURE MONTH
MAY 1975

a unique antihypertensive agent

Contraindications include active hepatic disease and known sensitivity to the drug. Use with caution in patients with a history of liver disease or dysfunction. Not recommended in pheochromocytoma or pregnancy.

It is important to recognize that a positive Coombs test, hemolytic anemia, and liver disorders may occur with methyldopa therapy. The rare occurrences of hemolytic anemia or liver disorders could lead to potentially fatal complications unless properly recognized and managed. For more details see the brief summary of prescribing information.

MSD
MERCK
SHARP&
DOHME

For a brief summary of prescribing information, please see following page.

MSD
MERCK
SHARP&
DOHME

addendum

to further
simplify therapy
for many patients

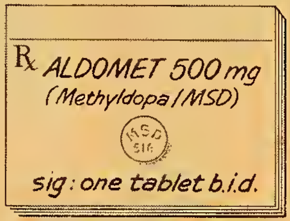
now available
ALDOMET® 500 mg
(METHYLDOPA|MSD)

- **often more practical to prescribe**
- **easier for patients to remember**

Now offered in addition to the standard 250-mg tablet, the new ALDOMET 500 mg tablet is a patient convenience. An especially important one, since in hypertension convenience of the dosage schedule is one factor that can make the difference in compliance of the patient. The minimum daily dose of ALDOMET is 250 mg b.i.d. The usual starting dose is 250 mg t.i.d. Dosage is adjusted as necessary by adding or deleting 250 mg or 500 mg at intervals of not less than two days. The maximum dose is 3.0 g per day.

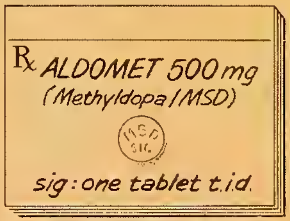
Examples of b.i.d. or t.i.d. dosage convenience provided by ALDOMET 500 mg within the usual daily dosage range of 500 mg to 2.0 g:

1.0-g daily dose =



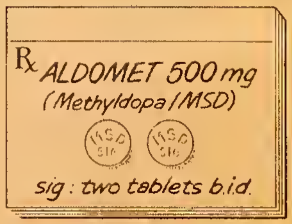
℞ *ALDOMET 500 mg*
(Methyldopa/MSD)
sig: one tablet b.i.d.

1.5-g daily dose =

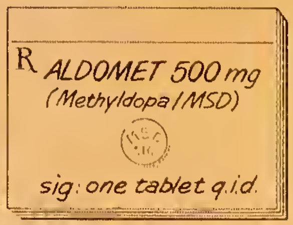


℞ *ALDOMET 500 mg*
(Methyldopa/MSD)
sig: one tablet t.i.d.

2.0-g daily dose =



℞ *ALDOMET 500 mg*
(Methyldopa/MSD)
sig: two tablets b.i.d.



℞ *ALDOMET 500 mg*
(Methyldopa/MSD)
sig: one tablet q.i.d.

NOTE: Tablets shown are not actual size.

in sustained moderate hypertension

ALDOMET® (METHYLDOPA|MSD)

usually lowers blood pressure effectively

Contraindications: Active hepatic disease, such as acute hepatitis and active cirrhosis. Known sensitivity. Not recommended in pheochromocytoma. Unsuitable in mild or labile hypertension responsive to mild sedation or thiazide therapy. Use cautiously in patients with history of previous liver disease or dysfunction.

Warnings: It is important to recognize that a positive Coombs test, hemolytic anemia, and liver disorders may occur with methyldopa therapy. The rare occurrences of hemolytic anemia or liver disorders could lead to potentially fatal complications unless properly recognized and managed. Read this section carefully to understand these reactions.

With prolonged methyldopa therapy, 10% to 20% of patients develop a positive direct Coombs test, usually between six and twelve months of therapy. Lowest incidence is at daily dosage of 1 g or less. This on rare occasions may be associated with hemolytic anemia, which could lead to potentially fatal complications. One cannot predict which patients with a positive direct Coombs test may develop hemolytic anemia. Prior existence or development of a positive direct Coombs test is not in itself a contraindication to use of methyldopa. If a positive Coombs test develops during methyldopa therapy, determine whether hemolytic anemia exists and whether the positive Coombs test may be a problem. For example, in addition to a positive direct Coombs test there is less often a positive indirect Coombs test which may interfere with cross matching of blood.

At the start of methyldopa therapy, it is desirable to do a blood count (hematocrit, hemoglobin, or red cell count) for a baseline or to establish whether there is anemia. Periodic blood counts should be done during therapy to detect hemolytic anemia. It may be useful to do a direct Coombs test before therapy and at six and twelve months after the start of therapy. If Coombs-positive hemolytic anemia occurs, the cause may be methyldopa and the drug should be discontinued. Usually the anemia remits promptly. If not, corticosteroids may be given and other causes of anemia should be considered. If the hemolytic anemia is related to methyldopa, the drug should not be reinstituted. When methyldopa causes Coombs positivity alone or with hemolytic anemia, the red cell is usually coated with gamma globulin of the IgG (gamma G) class only. The positive Coombs test may not revert to normal until weeks to months after methyldopa is stopped.

Should the need for transfusion arise in a patient receiving methyldopa, both a direct and an indirect Coombs test should be performed on his blood. In the absence of hemolytic anemia, usually only the direct Coombs test will be positive. A positive direct Coombs test alone will not interfere with typing or cross matching. If the indirect Coombs test is also positive, problems may arise in the major cross match and the assistance of a hematologist or transfusion expert will be needed.

Fever has occurred within first three weeks of therapy, sometimes with eosinophilia or abnormalities in liver function tests, such as serum alkaline phosphatase, serum transaminases (SGOT, SGPT), bilirubin, cephalin cholesterol flocculation, prothrombin time, and bromsulphalein retention. Jaundice, with or without fever, may occur, with onset usually in the first two to three months of therapy. In some patients the findings are consistent with those of cholestasis. Rarely fatal hepatic necrosis has been reported. These hepatic changes may represent hypersensitivity reactions; periodic determination of hepatic function should be done particularly during the first six to twelve weeks of therapy or whenever an unexplained fever occurs. If fever, abnormalities in liver function tests, or jaundice appear, stop therapy with methyldopa. If caused by methyldopa, the temperature and abnormalities in liver function characteristically have reverted to normal when the drug was discontinued. Methyldopa should not be reinstituted in such patients.

Rarely, reversible reduction in leukocyte count with primary effect on granulocytes has been seen. Reversible thrombocytopenia has occurred rarely. When used with other antihypertensive drugs, potentiation of antihypertensive effect may occur.

Use in Pregnancy and Childbearing Age—Not recommended in pregnancy. In women of childbearing age, weigh potential benefits against possible fetal hazards.

Precautions: Methyldopa may interfere with measurement of: uric acid by the phosphotungstate method, creatinine by the alkaline picrate method, and SGOT by colorimetric methods. Since methyldopa causes fluorescence in urine samples at the same wavelengths as catecholamines, spuriously high levels of urinary catecholamines may be reported. This will interfere with the diagnosis of pheochromocytoma. Stop drug if involuntary choreoathetotic movements occur in patients with severe bilateral cerebrovascular disease. Patients may require reduced doses of anesthetics; hypotension occurring during anesthesia usually can be controlled with vasopressors. Hypertension has occurred after dialysis in patients on methyldopa because the drug is removed by this procedure.

Adverse Reactions: Sedation, usually transient, may be seen during initial therapy or when dosage is increased. Headache, asthenia, or weakness may be noted as early, transient symptoms. Symptoms associated with effective lowering of blood pressure are occasionally seen and include dizziness, lightheadedness, and symptoms of cerebrovascular insufficiency. Angina pectoris may be aggravated. Symptoms of orthostatic hypotension may occur; if symptoms occur, reduction of dosage is suggested. Bradycardia, nasal stuffiness, mild dryness of mouth, and gastrointestinal symptoms including distention, constipation, flatus, and diarrhea occur occasionally; these generally can be relieved by reducing dosage. Nausea and vomiting have been reported in only a few patients. Sore tongue or "black tongue," pancreatitis, and inflammation of salivary glands may occur.

Weight gain and edema occur infrequently and are relieved by administering a thiazide diuretic; if edema progresses or signs of pulmonary congestion appear, discontinue drug. A rise in BUN has been observed. Other rare reactions include breast enlargement, lactation, impotence, decreased libido, skin rash, mild arthralgia, myalgia, paresthesias, Bell's palsy, parkinsonism, psychic disturbances including nightmares, reversible mild psychoses or depression. Urine exposed to air after voiding may darken because of breakdown of methyldopa or its metabolites.

Note: Dosage should be limited initially to 500 mg daily when following previous antihypertensive agents other than thiazides. Maximal recommended daily dose is 3.0 g. Patients with impaired renal function may respond to smaller doses than patients with normal kidney function. Syncope in older patients has been related to increased sensitivity in those with advanced arteriosclerotic vascular disease; this may be avoided by lower doses. Tolerance occasionally seen either early or late, but more likely between second and third month after initiation of therapy; increased dosage or combined therapy with a thiazide frequently restores effective control.

How Supplied: Tablets, containing 250 mg methyldopa each, in single-unit packages of 100 and bottles of 100 and 1000; Tablets, containing 500 mg methyldopa each, in single-unit packages of 100 and bottles of 100.

For more detailed information, consult your MSD representative or see full prescribing information. Merck Sharp & Dohme, Division of Merck & Co., INC., West Point, Pa. 19486

MSD MERCK SHARP & DOHME

PreSun®
(5% PABA LOTION)
may help prevent harmful effects of the sun such as premature aging of skin and skin cancer.*

*Information on file at Westwood Pharmaceuticals Inc.

WESTWOOD
PHARMACEUTICALS INC.
Buffalo, New York 14213

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KEEP THE HYPERTENSIVE PATIENT ON THERAPY KEEP THERAPY SIMPLE WITH

DYAZIDE®

Trademark

Each capsule contains 50 mg. of Dyrenium® (brand of triamterene) and 25 mg. of hydrochlorothiazide.

Neither inconvenient potassium supplements nor special K^+ rich diets needed as a rule. Just 'Dyazide' once or twice daily for maintenance.

Two prime reasons patients drop out of hypertensive therapy are (1) the patient failed to understand directions, and (2) the regimen was overly complicated. Dosage is simple with 'Dyazide', easily understood, once or twice daily, depending on response. There's no need to complicate the regimen with potassium supplements or unwieldy potassium-rich diets.

TO KEEP BLOOD PRESSURE DOWN AND KEEP POTASSIUM LEVELS UP

Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

> WARNING
> This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Indications: This combination drug finds its usefulness primarily in the treatment of edema. Any usefulness of triamterene when used with a thiazide in hypertension will derive from its potassium-sparing effect. Either its main diuretic effect or potassium-sparing effect when used with a thiazide drug should be determined by individual titration. (See box warning.)

Edema associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. Also, mild to moderate hypertension.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

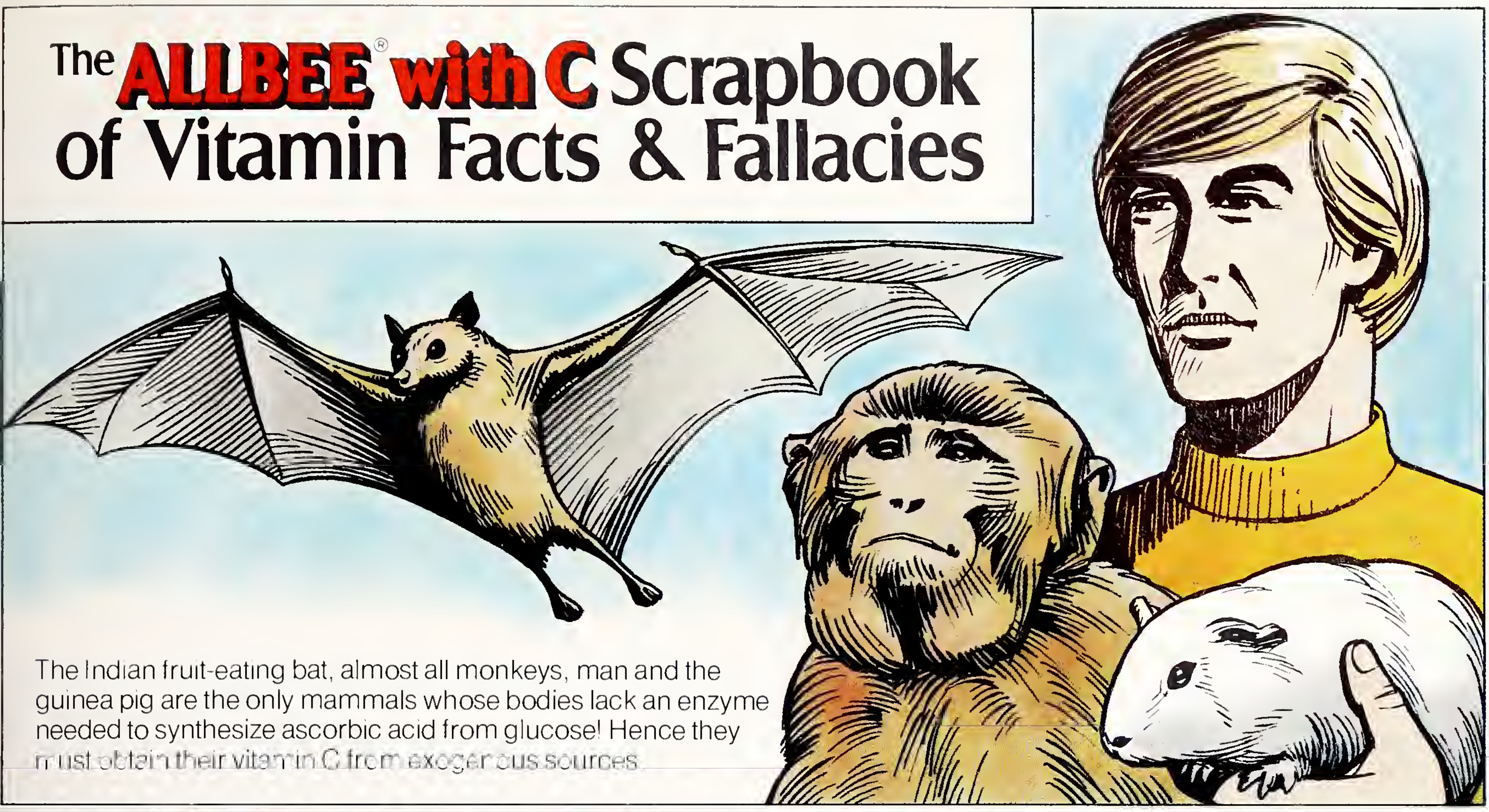
Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

Supplied: Bottles of 100 capsules; in Single Unit Packages of 100 (intended for institutional use only).

SK&F CO.
Carolina, P.R. 00630
Subsidiary of
SmithKline Corporation

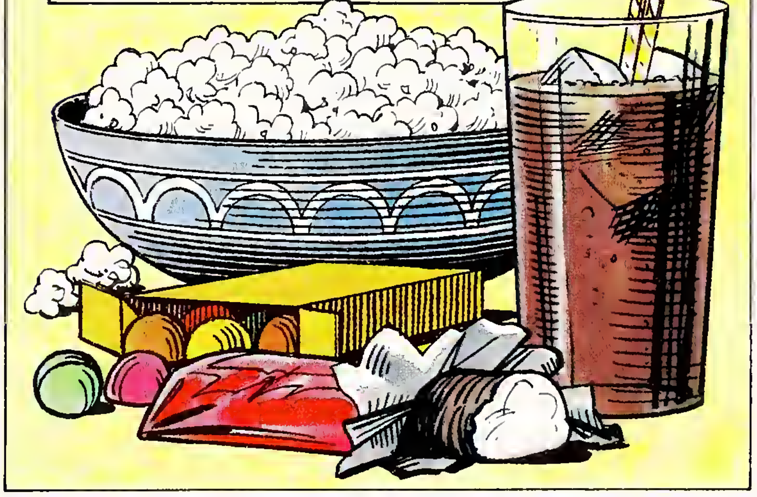
The ALLBEE® with C Scrapbook of Vitamin Facts & Fallacies



The Indian fruit-eating bat, almost all monkeys, man and the guinea pig are the only mammals whose bodies lack an enzyme needed to synthesize ascorbic acid from glucose! Hence they must obtain their vitamin C from exogenous sources

De Joinville writing about a 13th century crusade reported that barber surgeons had to "cut away the dead flesh from the gums to enable people to masticate their food." The disease he described was probably scurvy.

A 1965 U.S.D.A. survey revealed that American diets were lower in vitamin C than they had been 10 years earlier!

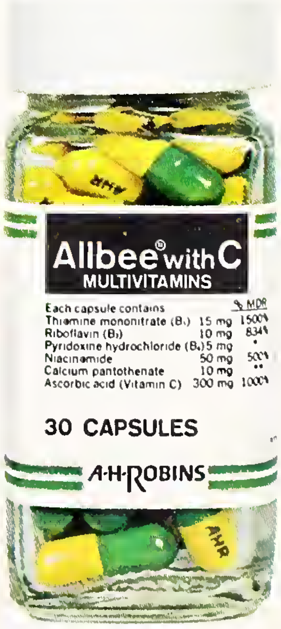


The outer leaves of cabbage and brussels sprouts contain more vitamin C than the heads. Yet, ironically, these are often trimmed away by the grocer to improve appearance and enhance sales appeal! Many housewives trim them even more before cooking!

Available on your prescription or recommendation

ALLBEE® with C

High Potency B-Complex and Vitamin C Formula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MULTIVITAMINS
Each capsule contains % MDR
Thiamine mononitrate (B₁) 15 mg 1500%
Riboflavin (B₂) 10 mg 834%
Pyridoxine hydrochloride (B₆) 5 mg *
Niacinamide 50 mg 500%
Calcium pantothenate 10 mg **
Ascorbic acid (Vitamin C) 300 mg 1000%
30 CAPSULES
A·H·ROBINS
AHR

A.H. Robins Company, Richmond, Va. 23220 A·H·ROBINS

Spasm reactor?

Donnatal®!

	each tablet, capsule or 5 cc. teaspoonful of elixir (23% alcohol)	each Donnatal No. 2	each Extentab
hyoscyamine sulfate	0.1037 mg.	0.1037 mg.	0.3111 mg.
atropine sulfate	0.0194 mg.	0.0194 mg.	0.0582 mg.
hyoscine hydrobromide	0.0065 mg.	0.0065 mg.	0.0195 mg.
phenobarbital (warning: may be habit forming)	(¼ gr.) 16.2 mg.	(½ gr.) 32.4 mg.	(¾ gr.) 48.6 mg.

Brief summary. Adverse Reactions: Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Contraindications: Glaucoma; renal or hepatic disease; obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); or hypersensitivity to any of the ingredients.

A-H-ROBINS A. H. Robins Company, Richmond, Virginia 23220

ARIZONA Lounger COMPANY

For Leisure or work
Maximal Comfort

Relax, dine or write
with lowered Power-Footrest

Rise up - or down -
fully power-supported

Lounge in contoured Comfort
in over 100 Positions

Push button-power
to rise up or down

Announcing a New Service to Physicians for Patient-Comfort

Motivated by Doctors Demands for special features in Chairs and Beds, we have organisezed a new department here in Phoenix specializing in building Chairs, Beds and Combination Chairbeds to specific requirements of patients suffering from Arthritis Rheumatism, Stroke, Asthma; Parkinson, Lung and other diseases, or broken limbs, Lumbar, Spine and various body ailments.

Patients seating problems can usually be solved by our standard product - the "Arizona Lounger" which is built with many (Pat.) advanced technical features, to provide the ultimate in Comfort for both the healthy (correct body-posture in any position) and the sick, for which additional features are available :

Adjustable Lumbar Support - to ease strain on spine
Retractable Armrests - for easier transfer
Powered Footrests - to raise legs high up
Adjustable single Footrest - to position limbs separately
Chair, Bed, or Combination - fully powered - to lower down or raise patient onto his feet
Executive Chairs, powered - for better posture at work

Professional inquiries and advice are welcome and should be directed to Henry C. Zur, Vice President, Design & Production

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medcal writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.

Rondomycin®
(methacycline HCl)

CONTRAINDICATIONS: Hypersensitivity to any of the tetracyclines.
WARNINGS: Tetracycline usage during tooth development (last half of pregnancy to eight years) may cause permanent tooth discoloration (yellow-gray-brown), which is more common during long-term use but has occurred after repeated short-term courses. Enamel hypoplasia has also been reported. **Tetracyclines should not be used in this age group unless other drugs are not likely to be effective or are contraindicated.**
Usage in pregnancy. (See above **WARNINGS** about use during tooth development.)
Animal studies indicate that tetracyclines cross the placenta and can be toxic to the developing fetus (often related to retardation of skeletal development). Embryotoxicity has also been noted in animals treated early in pregnancy.
Usage in newborns, infants, and children. (See above **WARNINGS** about use during tooth development.)
All tetracyclines form a stable calcium complex in any bone-forming tissue. A decrease in fibula growth rate observed in prematures given oral tetracycline 25 mg/kg every 6 hours was reversible when drug was discontinued.
Tetracyclines are present in milk of lactating women taking tetracyclines.
To avoid excess systemic accumulation and liver toxicity in patients with impaired renal function, reduce usual total dosage and, if therapy is prolonged, consider serum level determinations of drug. The anti-anabolic action of tetracyclines may increase BUN. While not a problem in normal renal function, in patients with significantly impaired function, higher tetracycline serum levels may lead to azotemia, hyperphosphatemia, and acidosis.
Photosensitivity manifested by exaggerated sunburn reaction has occurred with tetracyclines. Patients apt to be exposed to direct sunlight or ultraviolet light should be so advised, and treatment should be discontinued at first evidence of skin erythema.
PRECAUTIONS: If superinfection occurs due to overgrowth of nonsusceptible organisms, including fungi, discontinue antibiotic and start appropriate therapy.
In venereal disease, when coexistent syphilis is suspected, perform darkfield examination before therapy, and serologically test for syphilis monthly for at least four months.
Tetracyclines have been shown to depress plasma prothrombin activity; patients on anticoagulant therapy may require downward adjustment of their anticoagulant dosage.
In long-term therapy, perform periodic organ system evaluations (including blood, renal, hepatic).
Treat all Group A beta-hemolytic streptococcal infections for at least 10 days.
Since bacteriostatic drugs may interfere with the bactericidal action of penicillin, avoid giving tetracycline with penicillin.
ADVERSE REACTIONS: Gastrointestinal (oral and parenteral forms): anorexia, nausea, vomiting, diarrhea, glossitis, dysphagia, enterocolitis, inflammatory lesions (with monilial overgrowth) in the anogenital region.
Skin: maculopapular and erythematous rashes; exfoliative dermatitis (uncommon). Photosensitivity is discussed above (See **WARNINGS**).
Renal toxicity: rise in BUN, apparently dose related (See **WARNINGS**).
Hypersensitivity: urticaria, angioneurotic edema, anaphylaxis, anaphylactoid purpura, pericarditis, exacerbation of systemic lupus erythematosus.
Bulging fontanels, reported in young infants after full therapeutic dosage, have disappeared rapidly when drug was discontinued.
Blood: hemolytic anemia, thrombocytopenia, neutropenia, eosinophilia.
Over prolonged periods, tetracyclines have been reported to produce brown-black microscopic discoloration of thyroid glands; no abnormalities of thyroid function studies are known to occur.
USUAL DOSAGE: Adults – 600 mg daily, divided into two or four equally spaced doses. More severe infections: an initial dose of 300 mg followed by 150 mg every six hours or 300 mg every 12 hours. Gonorrhea: In uncomplicated gonorrhea, when penicillin is contraindicated, 'Rondomycin' (methacycline HCl) may be used for treating both males and females in the following clinical dosage schedule: 900 mg initially, followed by 300 mg q.i.d. for a total of 5.4 grams.
For treatment of syphilis, when penicillin is contraindicated, a total of 18 to 24 grams of 'Rondomycin' (methacycline HCl) in equally divided doses over a period of 10-15 days should be given. Close follow-up, including laboratory tests, is recommended.
Eaton Agent pneumonia: 900 mg daily for six days.
Children – 3 to 6 mg/lb/day divided into two to four equally spaced doses.
Therapy should be continued for at least 24-48 hours after symptoms and fever have subsided.
Concomitant therapy: Antacids containing aluminum, calcium or magnesium impair absorption and are contraindicated. Food and some dairy products also interfere. Give drug one hour before or two hours after meals. Pediatric oral dosage forms should not be given with milk formulas and should be given at least one hour prior to feeding.
In patients with renal impairment (see **WARNINGS**), total dosage should be decreased by reducing recommended individual doses or by extending time intervals between doses.
In streptococcal infections, a therapeutic dose should be given for at least 10 days.
SUPPLIED: 'Rondomycin' (methacycline HCl): 150 mg and 300 mg capsules; syrup containing 75 mg/5 cc methacycline HCl.

Before prescribing, consult package circular or latest PDR information.

Rev. 6/73

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When the focus is on bronchitis due to susceptible strains of *H. influenzae* and pneumococci*

Rondomycin® 300 mg. Capsules

[methacycline HCl]

Delivers from the very first dose:

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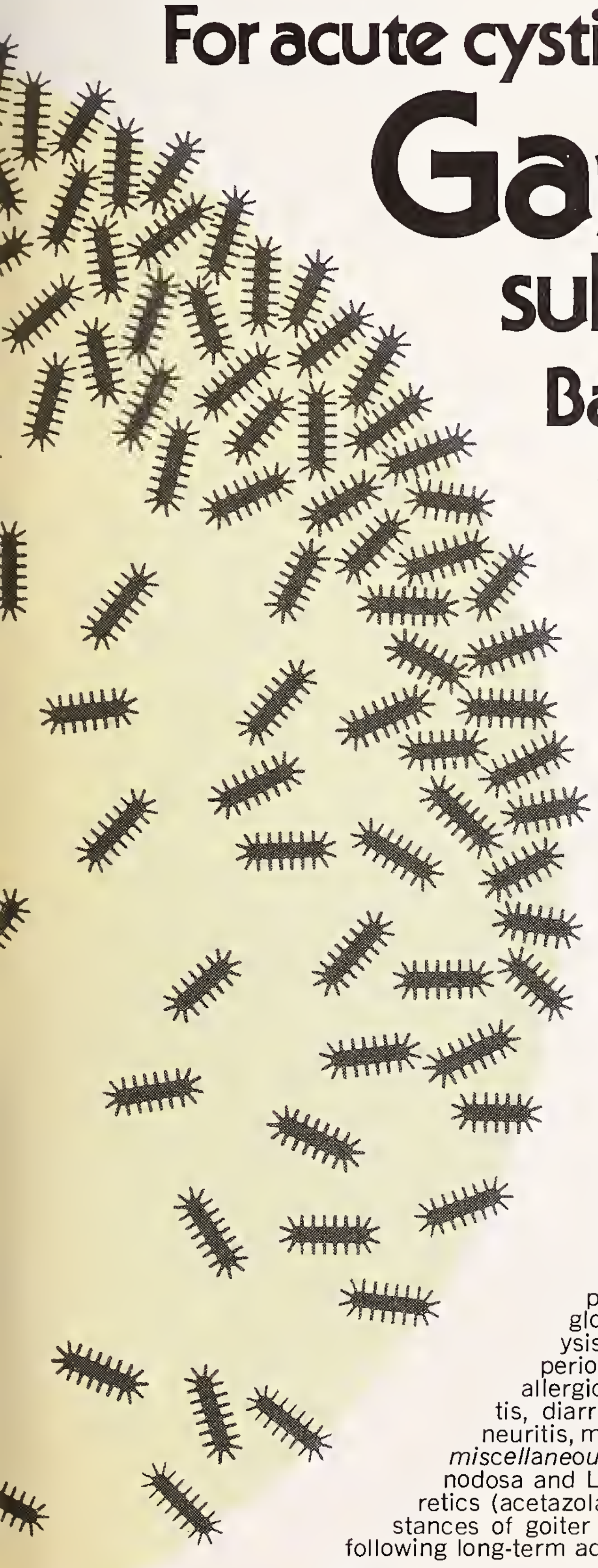
*Since many strains are known to be resistant, routine sensitivity testing is recommended.

2 tablets B.I.D. chec

Unchecked *E. coli* reach exponential growth rates when bladder defenses are weak. Gantanol® (sulfamethoxazole) can usually check the growth of *E. coli* in 48-72 hours and sterile urine should be achieved within this time frame in uncomplicated cystitis due to susceptible strains of *E. coli*.

xploding counts of *E. coli*



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Basic therapy with convenience:

4 tablets (0.5 Gm each) STAT— then 2 tablets B.I.D. for 10 to 14 days

*Nonobstructed; due to susceptible strains of *E. coli*

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute, recurrent or chronic nonobstructed urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms. ***Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides, especially in chronic or recurrent urinary tract infections.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than two months of age.

Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis).

Usual adult dosage: 2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

Usual child's dosage: 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

Supplied: Tablets, 0.5 Gm sulfamethoxazole; Suspension, 0.5 Gm sulfamethoxazole/teaspoonful.

ROCHE

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When low back pain* interferes...

Help relieve pain, restore mobility with

PARAFON FORTE® tablets

chlorzoxazone† 250 mg ; acetaminophen 300 mg.

*This drug has been evaluated as "probably" effective for this indication.

See brief summary of prescribing information on facing page for Indications, Contraindications, Warnings, Precautions and Adverse Reactions.

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PARAFON FORTE® tablets help relieve pain, restore mobility and stop pain-spasm feedback by providing:

a nonsalicylate analgesic equal to aspirin for relief of pain,[1,2] yet unlikely to cause the gastric irritation,[2,3] allergic reactions[2] or increased bleeding time[4] associated with aspirin therapy...

and a skeletal muscle relaxant shown in extensive clinical studies to afford relief of discomfort in acute musculoskeletal conditions*[5-7] but which is not an antihistamine or tranquilizer derivative and is unlikely to produce a tranquilizing or sedative effect.[5,7,8]

* **Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Probably" effective as an adjunct to rest and physical therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Chlorzoxazone does not directly relax tense skeletal muscles in man.

Contraindications: Sensitivity to either component.
Warnings: *Usage in Pregnancy*—Use in women of childbearing potential only when potential benefits outweigh possible risks.
Precautions: Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or any signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped.
Adverse Reactions: Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, chlorzoxazone may possibly have been associated with gastrointestinal bleeding. While PARAFLEX® (chlorzoxazone) tablets and other chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately twenty-four patients, it was not possible to state that the dysfunction was or was not drug induced.
Usual Adult Dosage: Two tablets q.i.d.
Supplied: Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: **1.** Batterman, R.C., and Grossman, A.J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L.S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4. New York, The Macmillan Company, 1970. **3.** Vickers, F.N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C.H., Jr., and Britten, A.F.H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Vernon, W.G.: Curr. Therap. Res. *14*:801, 1972. **6.** Scheiner, J.J.: Curr. Therap. Res. *14*:168, 1972. **7.** Walker, J.M.: Curr. Therap. Res. *15*:248, 1973. **8.** Data on file, McNeil Laboratories, Inc.

†U.S. Patent No. 2,895,877

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Original Articles

INTERTROCHANTERIC FRACTURE OF THE HIP

RANJIT S. BISLA, M.D.
HERBERT J. LOUIS, M.D.

In recent years the literature has been flooded with articles about methods of fixation for intertrochanteric fractures of the hip. The purpose of this paper is to review:

(1) the literature
(2) 214 cases treated in this hospital during the last five years
(3) ways to prevent common complications

REVIEW OF LITERATURE

Smith-Petersen revolutionized the treatment for fracture of the neck of the femur in 1930. Modifications for intertrochanteric fractures soon followed. Thornton in 1937 described his extension plate, and later Neufeld introduced his one-piece appliance. Jewett introduced a one-piece angle nail in 1941. McLaughlin's adjustable plate made the procedure more simple for some. These nail plates have been used extensively all over the world. Over one hundred modifications have been introduced in the past three decades.

Dimon and Houston in 1966 reported their results with medial displacement in unstable intertrochanteric fractures of the hip.

CLASSIFICATION

In 1948 Boyd and Griffen reported their classification which depends on the relative ease or difficulty of securing and maintaining reduction. It provides information of value in planning the treatment and prognosis.

Type I: Fractures extend along the intertrochanteric line from greater to lesser trochanter. Reduction is simple and is maintained with little difficulty (Fig. 1).

Type II: Fractures are comminuted within the intertrochanteric line. The reduction and maintenance are more difficult (Fig. 2).

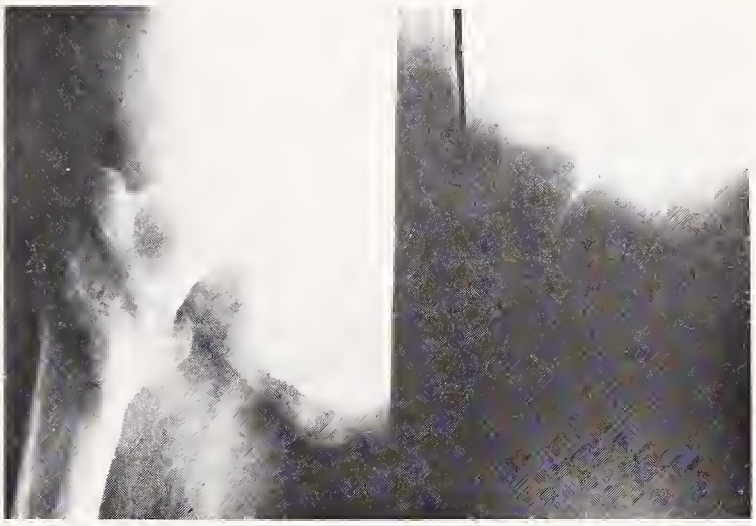


Figure 1.
X-ray of the hip shows fracture line extending from greater trochanter to lesser trochanter without any comminution.

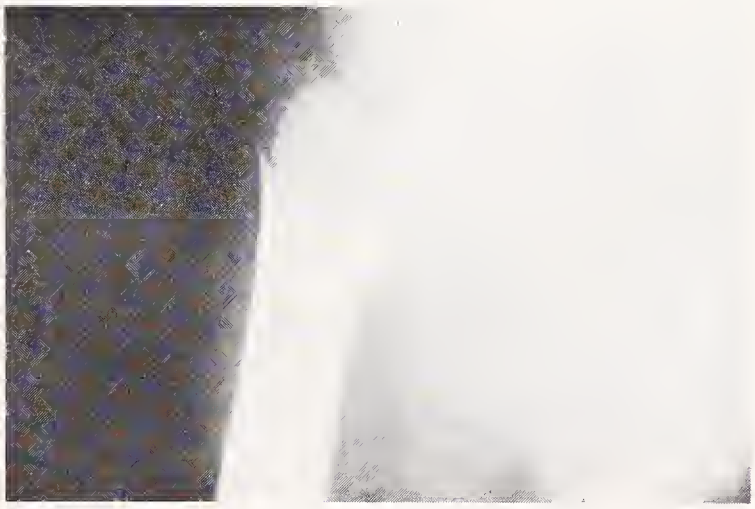


Figure 2.
X-ray of hip shows fracture along the intertrochanteric line with comminution along the posterior and medial cortex.

Type III: Fractures are inter and sub trochanteric with at least one fracture line passing across the upper end of the shaft in the region of the lesser trochanter. These fractures are more difficult to reduce and maintain (Fig. 3 and 4).

Type IV: Fractures also extend beyond the trochanteric region with fracture lines in at least two planes. These fractures need two plane fixation to maintain reduction (Fig. 5).

PATHOMECHANICS

Muscular forces play a role in complications after hip nailing. Loss of position of the nail and coxa vara can occur before ambulation.

The original thought that coxa vara was due to the unopposed action of the gluteus medius and minimus muscles seems to be incorrect. Recently

---

From: Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix 85008 (Dr. Louis). 3008 N. 3rd Street, Phoenix 85012 (Dr. Bisla).

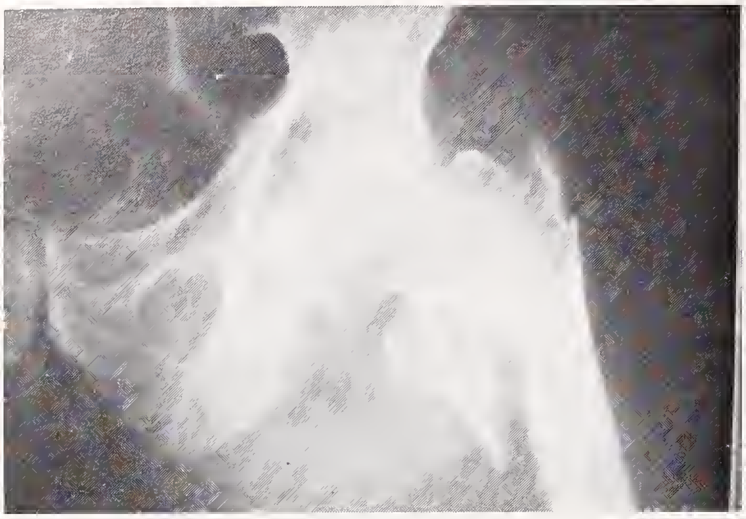


Figure 3.
X-ray showing inter and sub-trochanteric fracture with one plane fracture below lesser trochanter.

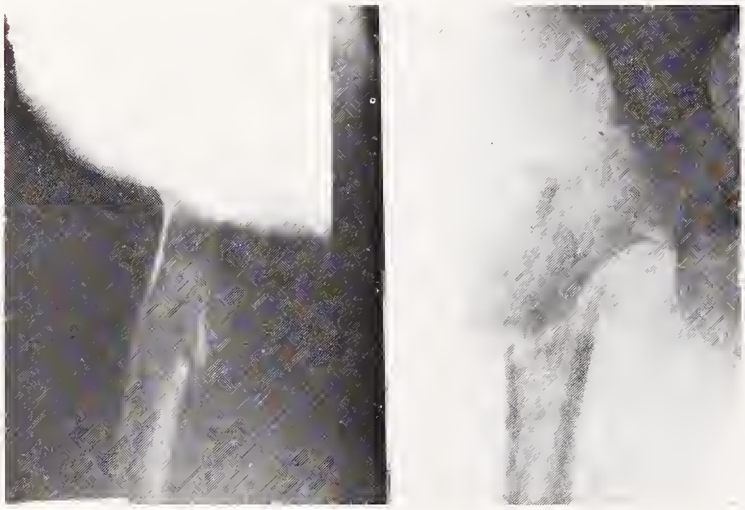


Figure 4.
X-ray showing typical subtrochanteric fracture, also classified as Boyd Type III.

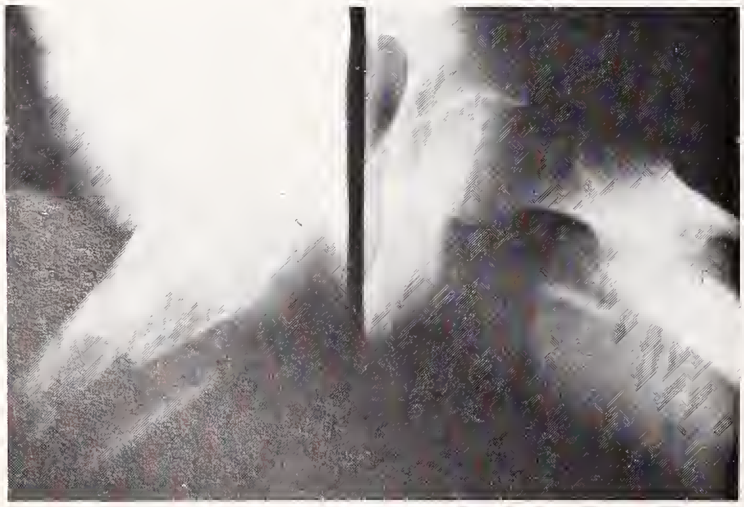


Figure 5.
X-ray shows fracture extending beyond trochanteric area with fracture in two planes.

EMG's reveal that the *ad*ductors are in spasm and *ab*ductors are relaxed after hip nailing.

Chalmers in 1970 reported that the eccentric load transmitted by the femoral shaft during weight bearing concentrates on the medial part. A vertical load of 100 pounds causes compression stress on the medial part exceeding 1000 pounds per square inch and produces a shearing force in the lateral cortex up to 800 pounds per square inch. Therefore, the appliance for fixation must be strong enough to bear these unexpected forces, particularly in unstable fractures. Various nails are available with different strengths.

Type of Nail	Angle	Average Maximum Strength
Smith-Petersen	132	133
I-Beam	135	357
Pugh	130	230
Massie	155	186
Neufeld	130	67
Jewett (modern)	135	311
Key	130	241
Holt (modern)	130	845

An average person (75 kilos) exerts 385 pounds per square inch on the stationary hip during the stance phase of gait. When a patient rolls in bed or walks non-weight bearing, the pressure exerted on the hip approaches the same figure. This force can be reduced to 1 to 1.5 times body weight by allowing partial weight bearing. In the normal individual the use of a cane can reduce the force to even less. If the fracture has not been reduced properly, the whole force is exerted on the nail. If it is not strong enough, it will break or migrate.

MATERIAL

The following statistics were gathered by review of over 300 cases of trochanteric fractures treated Maricopa County General Hospital between 1967 and 1971. Two hundred fourteen files had sufficient information in them to be included. There were by Boyd's classification 62 Type I, 90 Type II, 37 Type III, and 25 Type IV, and there were 90 unstable, 94 stable and 30 subtrochanteric by Evan's method.

A Smith-Petersen nail and McLaughlin plate were used in 49 and a Jewett nail was used in 165.

The age varied from nineteen to ninety-seven with an average of 65.4 years.

There were 98 males and 116 females. One hundred one were on the right and one hundred thirteen on the left.

The surgery was done from one to fifty-three days after injury with an average of 5.2 days.

There were thirteen unstable fractures which were treated by medial displacement.

There were four hips in which buttress plates were used. In all the other cases regular nailings were done.

Estimated blood loss ranged from 200 cc. to 1500 cc. with an average of 450 cc. per patient. The patients received an average of 1.5 units of whole blood for replacement.

The patients were "up-in-chair" on the day following surgery and ambulated non-weight bearing as soon as tolerated. Total stay in the hospital ranged from six to one hundred fifty days. The average was 36.5 days.

There were 47 patients who remained confined to wheel chairs despite fracture healing. Thirty-two patients had other diseases which were responsible for non-ambulatory status. In nine patients pain and senility were responsible for a non-ambulatory status. Six patients were non-ambulant prior to fracture.

COMPLICATIONS

(1) **Mortality:** Intertrochanteric fractures are associated with high mortality due to advanced age and intercurrent disease. Twenty-five patients died in the first three months postop. Pulmonary embolism was the most common cause.

Pulmonary Embolism	11
Broncho Pneumonia	5
Septicemia	3
Myocardial Infarction	4
Cerebral Thrombosis	1
Peritonitis	1

This series is comparable with other series in literature.

1963	Holt	13 %
1968	Holt	27 %
1941	Morris	44 %
1941	Morris	21.4%
1947	Cleveland et al	34 %
1947	Cleveland et al	12.6%
1968	Johnson	27 %
1948	Boyd	18.2%
1971	Riska	14.4%
1970	Sarmiento	16 %
1963	Sarmiento	13 %
	This series	11.6%

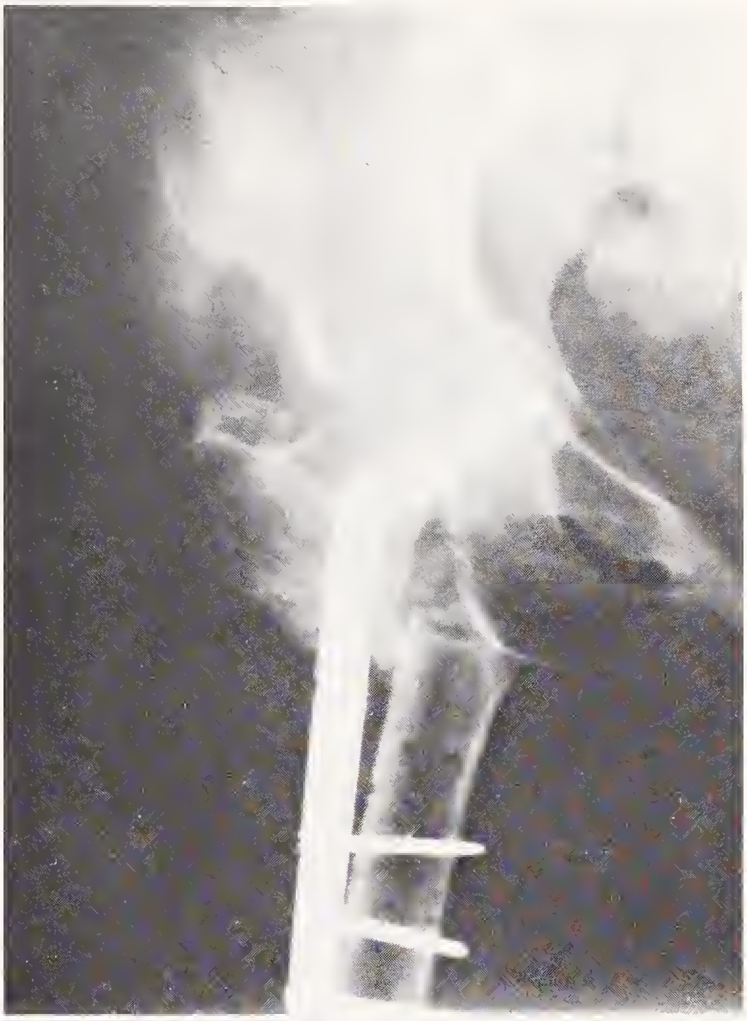


Figure 6.
X-ray of 65-year-old male who shows evidence of non-union of subtrochanteric fracture after repeated nailing.

(2) **Infection:** Deep infection is a disaster in Jewett nailings. We had ten superficial infections and eleven deep infections.

Superficial Infection		5.0%
Deep Infection		5.1%
Total	10.1%	
Sarmiento 1967		5.0%
Sarmiento 1963		6.0%
Deep	4%	
Superficial	2%	
Holt 1968		13.0%
Deep	7%	
Superficial	6%	

The nail was removed in seven patients, and three patients died with septicemia. One patient was treated with antibiotics alone. Cultures were positive in ten deep infections:

7 Staph coagulase positive
1 claustridium Welchii
3 Gram negative E-coli

All the superficial infections were with Staphlococcus coagulase positive.

(3) **Pneumonia:** Hypostatic and bronchopneumonia occurred in fifteen patients with five deaths.

(4) **Thromboembolism:** Deep vein thrombosis after hip surgery was reported by Johnson (in 1968) to be present in 52% of cases proved by phlebography.

(5) **Other Complications:**

Complication	**No.**
Fracture Neck of Femur	1
Fracture Femur	2
Decubitus Ulcer	10
Urinary Tract Infection	17
Paralytic Ileus	1
Myositis Ossificans	1
Upper Respiratory Infection	3
Chronic Orchitis	1
Foot Drop	1
Cardiac Arrest	1
Avascular Necrosis of Head	1
Empyema of Gallbladder	1
Gangrene of Leg	1
Total Complications	40

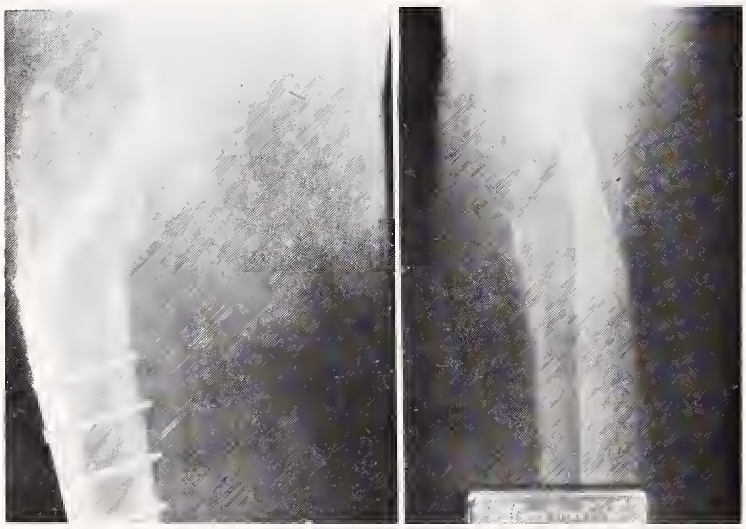


Figure 7A.
X-ray of 58-year-old male showing incomplete reduction of medial-posterior cortex at time of surgery.

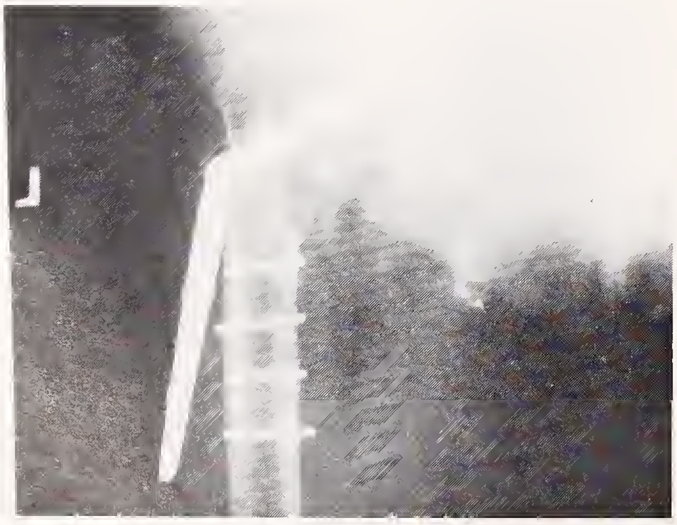


Figure 7B.
X-ray of same person after 6 months of nailing show nail has bent. Fracture has healed in varus.

NONUNION

Four patients had nonunions (Fig. 6). Three of them had subtrochanteric fractures. There were two broken nails and in one the nail was bent. This corresponds to 2% nonunion in Boyd's series.

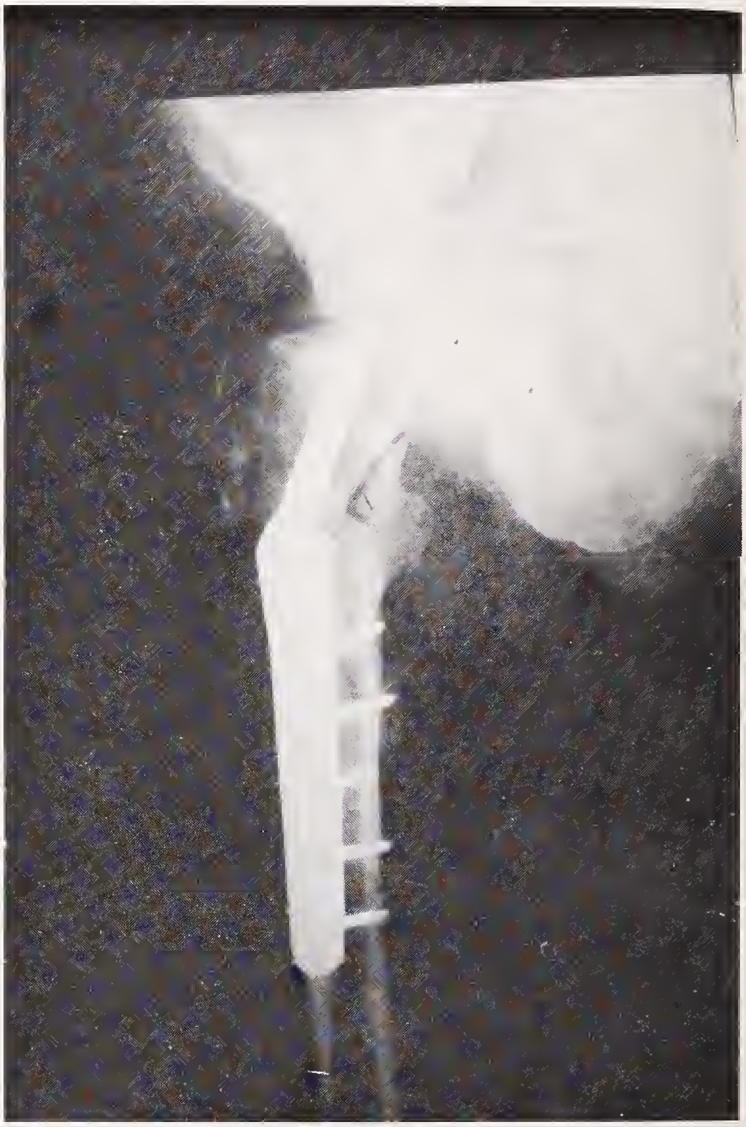


Figure 8A.
X-ray of 63-year-old female showing incomplete reduction at time of surgery.

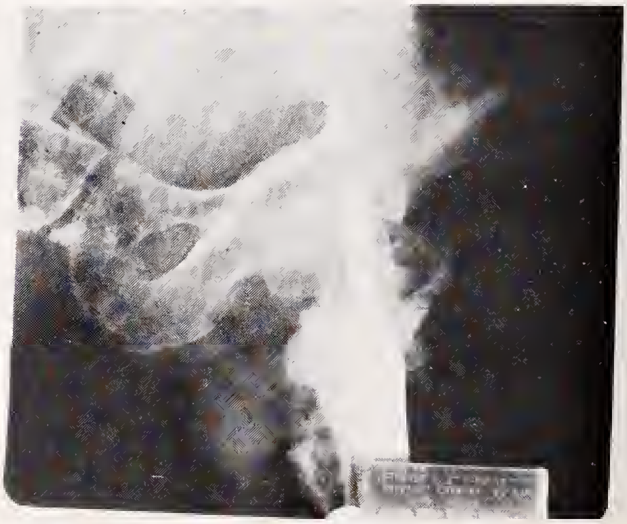


Figure 8B.
X-ray of same person five months later showing that nail has cut superiorly and posteriorly, and became symptomatic though fracture healed in varus.

FAILURE OF APPLIANCE

In two additional patients the nail was bent but the fracture united (Fig. 7A & B). In all five patients there was incomplete reduction of the fracture at the time of operation.

In four patients the nail cut out posteriorly and superiorly and became symptomatic (Fig. 8A and B).

In seven patients renailing was done with shorter nails and/or bone grafting. All healed after the second procedure.

MEDIAL MIGRATION AND PENETRATION

We have thirteen cases of medial migration in this series in which there was no evidence of joint involvement. In three cases in which medial migration was done initially, the nail moved medially by .5 cm. In ten cases the nail penetrated into the hip joint before the fracture was healed, and in all these cases the nails were removed after the fracture was healed.

ASSOCIATED DISEASES

Diabetes	22
Active TB	1
Epilepsy	3
Metastatic CA of Colon	2
Rheumatoid Arthritis	3
Hemiplegia	4
CA Breast	2
Hypertension	2
Shiegella Dysentery	1
COPD	9
Neurosyphilis	1
Recent MI	2

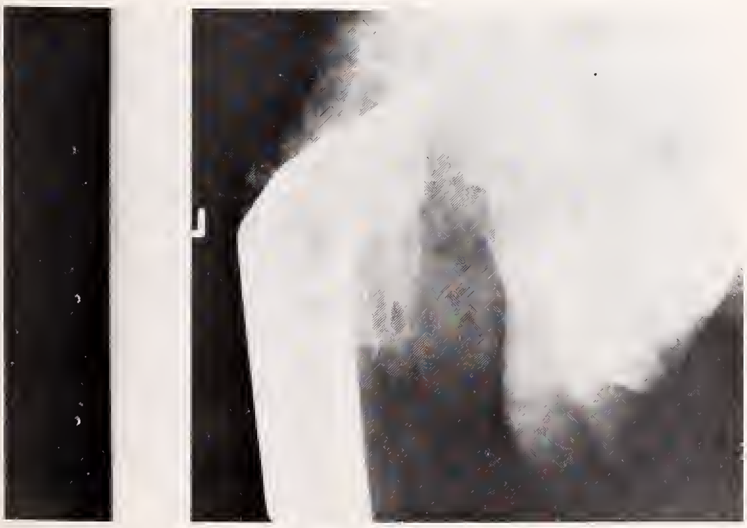


Figure 9.
X-ray of 64-year-old female one month after internal fixation of subtrochanteric fracture showing failure of appliance with all seven pulled out of femur.

Most of the patients were treated for their respective disease in addition to the hip fracture.

DISCUSSION

Patients should be allowed to walk with partial weight bearing and trained in the use of external walking aids.

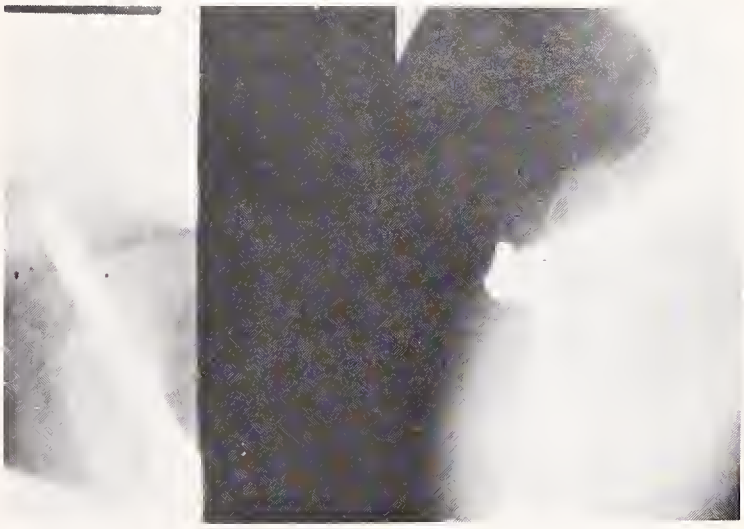


Figure 10A.
X-ray of 71-year-old female showing inadequate fixation of fractured femur at medial and posterior cortices.

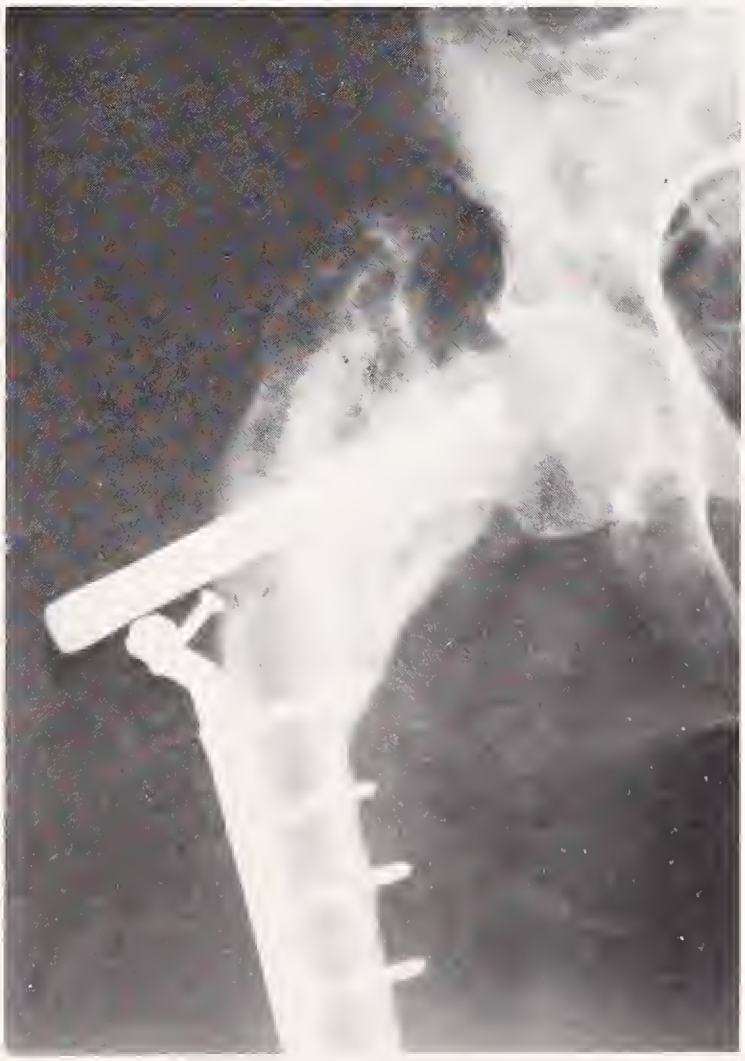


Figure 10B.
X-ray of same person 8 months later showing healed fracture in varus with failure of appliance.

Unstable fractures remain a problem. The main dangers in unstable fractures are:

(1) breakage of the appliance (Fig. 9)
(2) varus deformity (Fig. 10A & 10B)
(3) malunion
(4) migration of nail (Fig. 11)

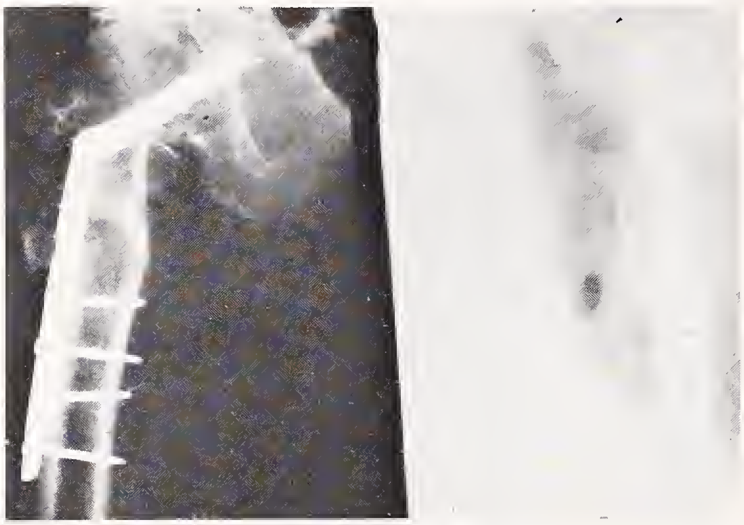


Figure 11.
X-ray of 62-year-old male showing medial migration of nail after inadequate fixation 5 weeks ago.

Many factors are responsible for these complications:

(1) adductor pull
(2) incomplete reduction
(3) failure of appliance

Incomplete reduction in unstable fractures is responsible for most complications (Fig. 12A & 12B). Comminution of the medial and posterior cortex, subtrochanteric fracture (Fig. 13), the existence of four fragments (Fig. 14A, B and C), and vertical fracture lines all produce an unstable situation.

Sarmiento in 1963 described an osteotomy, reducing the medial cortex to the calcar, and nailing in valgus with a 150° I-Beam nail. Results were often excellent. Unstable fractures were converted into stable fractures and allowed early weight bearing. He cautioned against excessive valgus.

Houston and Dimon in 1966 advocated medial displacement at time of reduction by bringing the inferior and medial part of the neck into the medullary cavity and fixing the fracture in valgus.

In 1972 Robert et al reported that there is definite deterioration in motion and function of the hip and knee after medial displacement. Medial displacement also leads to weakening of the abductor arms. However, Houston and Dimon in 1970 again emphasized that all unstable fractures should be reduced and pinned with medial displacement.

Recently Kuntschner and Zickel have designed IM rods for subtrochanteric fractures and both appear promising.

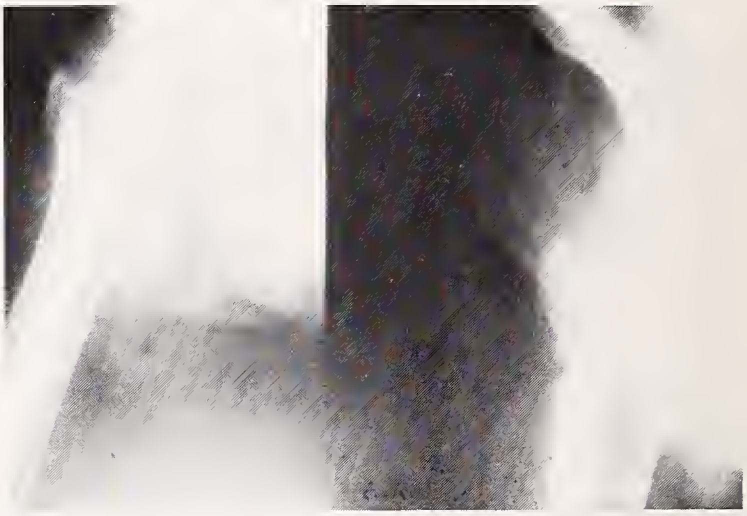
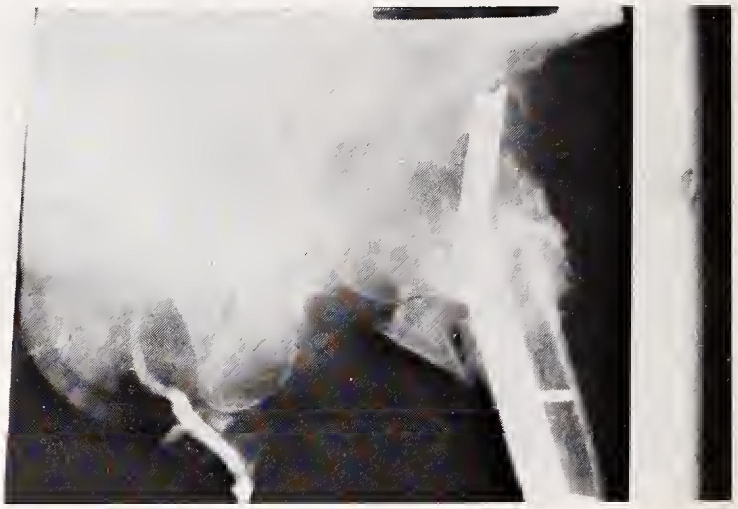


Figure 12A.
X-ray of 69-year-old female showing comminution of posterior cortex at level of lesser trochanter making it an unstable fracture.



X-ray of same person 6 months later showing penetration of nail superiorly and posteriorly with fracture healed in varus.

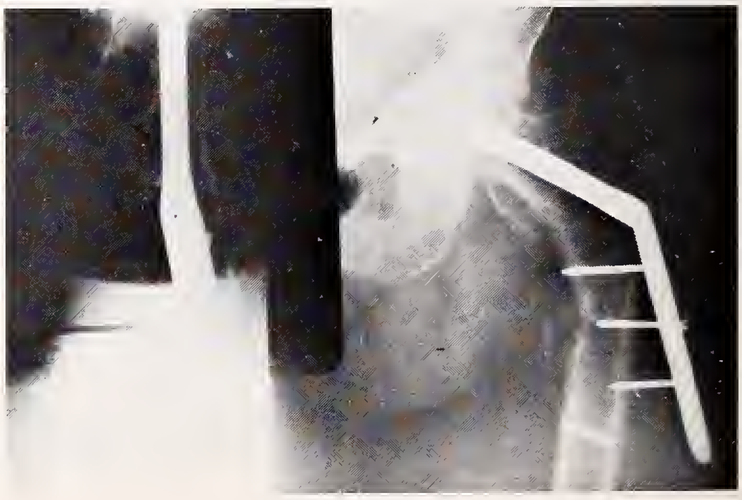


Figure 13.
X-ray of 59-year-old female showing failure of appliance in an unstable subtrochanteric fracture.

CONCLUSIONS

(1) Reduce the fracture to gain stability or use some appliance strong enough to hold the fracture in place until the fracture heals. Displacement may accomplish the same thing.

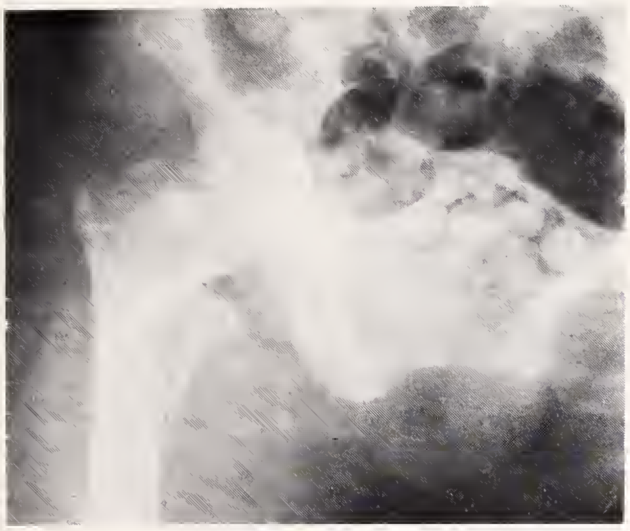


Figure 14A.
X-ray of 67-year-old female showing four fragment fracture.

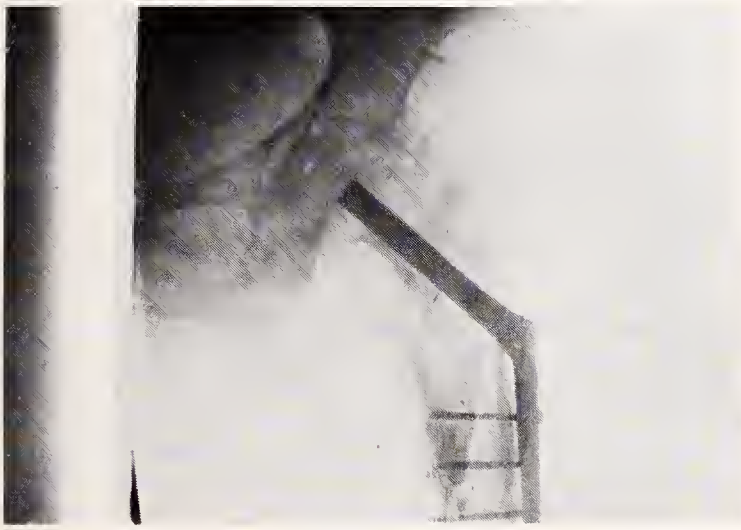


Figure 14B.
X-ray showing attempted anatomical reduction with fixation.

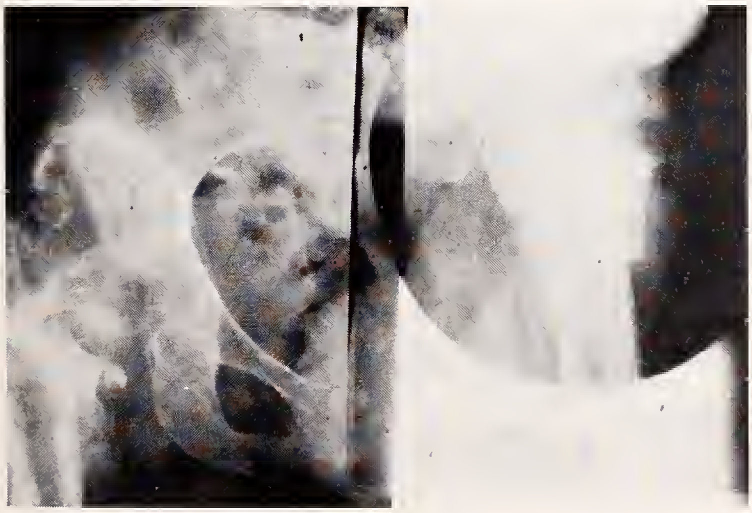


Figure 14C.
X-ray one year later with nail out showing dissolution of the head of the femur with rest of the head healed in varus position.

(2) As these patients are relatively old, the surgery should be carried out as soon as possible. Delay in surgery has been responsible for many complications. In an intertrochanteric fracture of the hip, there is no contraindication to surgery except recent myocardial infarction.

(3) All stable fractures should be reduced and fixed with a nail with early walking and partial weight bearing.

(4) Complications and complicating factors have a high incidence. Methods of combatting phlebothrombosis and pulmonary embolization deserve additional consideration and study.

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MILIARY COCCIDIOIDOMYCOSIS

HENRY W. RANDLE, Ph.D.

Even within the endemic coccidioidomycosis area of the Southwest, miliary disease of the lungs is more commonly considered to be of tuberculous origin. Several days are often required for a definitive diagnosis of miliary coccidioidomycosis, and if not vigorously pursued, becomes a postmortem diagnosis. The case report which follows illustrates this diagnostic confusion between tuberculosis and coccidioidomycosis when the miliary pattern is seen on X-ray.

INTRODUCTION

Coccoidioidomycosis is a fungus infection caused by inhalation of the chlamydospores of *Coccidioidomycosis immitis* in the southwestern United States. These inhaled spores localize in the lungs where they evoke a foreign body reaction which contains the infection by a "walling-off" process similar to tubercle formation. In most cases the resulting infection is so mild that it remains unnoticed; only a positive coccidiodin skin test will reveal that infection has occurred. In a small percent (less than 0.5%) of cases the fungus disseminates, producing lesions in the lymph nodes, spleen, liver, bones, skin, adrenals, myocardium, kidneys, and brain in addition to the lungs. Because this form of the disease is invariably fatal if untreated, it is important that a diagnosis be made and therapy started as early as possible in its course. Unfortunately, early diagnosis is frequently difficult. In addition to its rather protean pulmonary symptoms, coccidioidomycosis may mimic a wide spectrum of diseases, and in travelers through the Southwest, become manifest upon return to a nonendemic area, predisposing to diagnostic errors (Knapp et al, 1972).

The case described below is of a patient with disseminated coccidioidomycosis complicated with meningitis. Symptoms, signs, and radiographic findings were consistent with miliary tuberculosis.

CASE REPORT

The patient is a 55-year-old white man referred to the Tucson Veterans Hospital with a fever of undetermined origin for three weeks, and associated shaking chills, night sweats, headaches, and 25 pound weight loss. Two weeks of therapy with tetracycline and aspirin had produced no symptomatic improvement.

On admission the temperature was 38.9 C, the pulse 92, and the respirations 20. The blood pressure was 126/78 mmHg.

Physical examination was unremarkable, except for a warm, dry, somewhat flushed skin compatible with the temperature elevation.

A radiograph of the chest revealed bilateral, 1-2 mm nodular infiltrates distributed evenly throughout both lung fields (Figure 1). There was no evidence of pulmonary effusion or media-

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stinal lymphadenopathy. The hematocrit, WBC, serum electrolytes, creatinine, and BUN were all within normal limits. A lumbar puncture showed a clear fluid with 43 polys/mm,^{3} 80 mg % protein, and 47 mg % glucose (serum glucose 114 mg %).

A presumptive diagnosis of miliary tuberculosis was made on the first hospital day and the patient was started on isoniazid, ethambutal, and streptomycin.

During the first five days of hospitalization no organisms could be isolated from blood, sputum, bone marrow, CSF, or gastric aspirates. Tuberculin and histoplasmin skin tests were both positive, and a coccidioidin skin test (1:10) was negative. Protein electrophoresis and febrile agglutinins were nondiagnostic. A liver biopsy showed non-necrotic, non-caseating granulomas surrounded by eosinophils, but no organisms were seen with special staining techniques.

Despite the initiation of anti-tuberculous chemotherapy, the patient remained febrile and the chest film was unchanged. On the 12th hospital day the WBC's in the cerebrospinal fluid had risen to 165 polys per mm.^{3} Serologic tests obtained at the time of admission showed "strongly positive" serum precipitins for coccidioidomycosis. The serum complement fixation was positive at a 1:4 dilution. A definitive diagnosis was made on the 15th hospital day when *C. immitis* was cultured from the urine and sputum specimens which had been collected on admission. Because of the patient's positive tuberculin skin test, he was maintained on isoniazid and ethambutol. Treatment with Amphotericin B was started intravenously and intrathecally. The patient tolerated the therapy well and eight months after treatment was initiated, he was free of clinical symptoms. The serum complement fixation remained positive at a 1:4 dilution and the chest radiograph revealed the widespread granulomas to be less distinct than they had been at the time of admission.

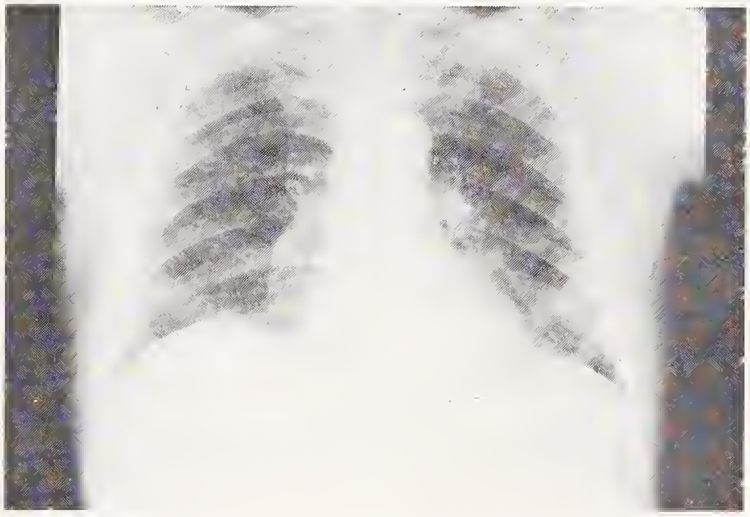

Figure 1.
Radiograph of the chest obtained on admission, showing a bilateral, 1-2 mm, nodular infiltrate distributed evenly throughout both lung fields.

DISCUSSION

Miliary coccidioidomycosis refers to that form of the disease produced by dissemination of *C. immitus* spherules throughout the body by the blood or lymph and characterized by development of innumerable, small (1-2 mm) lesions (coccidioidal granulomas) in the lungs and other organs. A review of the literature reveals that when the miliary pattern is present on pulmonary radiographs the disease is frequently confused with miliary tuberculosis, usually with fatal results.

In Birsner's review of 500 cases of pulmonary coccidioidomycosis (1954), it was stated that a number of patients with coccidioidomycosis were misdiagnosed as having tuberculosis, confined to sanatoria, and died, never having been treated for coccidioidomycosis.

Even recently there have been case reports of patients treated with anti-tuberculous medications for miliary tuberculosis but who died of miliary coccidioidomycosis (Knapp et al, 1972).

Dissemination is seen most frequently in immunologically suppressed patients. There are numerous reports of patients developing fevers of undetermined origin and vague symptomatology with "fine miliary densities" in their lungs while undergoing treatment with prednisone. These patients are frequently treated with anti-tuberculous medicines, only to have tissue cultures positive for *C. immitis* post mortem (Castellot et al, 1960; Hileman, 1963).

Another diagnostic problem arises when coccidioidomycosis becomes manifest in a non-endemic area. Caudill et al (1970) reported nine cases of coccidioidomycosis meningitis from Texas in which the delay in diagnosis ranged from one to sixteen months. A similar case was reported in the Massachusetts General Hospital Case Records in 1971 with *C. immitis* isolated from the cerebrospinal fluid and cultured ten days postmortem.

The diagnosis of miliary coccidioidomycosis is suspected by clinical, environmental and radiographic evidence. The presenting symptoms are usually (though not invariably) vague and chronic, unlike the acute illness and prostration usually seen in patients with miliary tuberculosis. Continuous low-grade fever, chills and night sweats, severe anorexia and rapid loss of strength and weight are the usual but not invariable presenting symptoms. Evidence of dissemination usually appears in a few weeks or months after the initial primary infection so it should be determined if the patient has been in an endemic area within that time period. The disease occurs most frequently between 25 and 55 years of age, affecting males more frequently than females. As noted previously, in cases of miliary coccidioidomycosis, the coccidioidin skin tests are almost always negative. Thus, as emphasized by Levin (1970), a negative skin test is of limited value. If the disease is suspected by history and chest films, serologic tests should be performed. Serum precipitins and elevated complement fixing antibodies are of far greater significance and more often seen than skin tests, and positive results will lead the physician to be more aggressive and intensify his attempts to identify the invading organism through multiple microscopic examinations and cultures of all available fluids, and tissues including: sputum, gastric washings, fiberoptic bronchoscopy brushings, pleural and spinal fluid, urine, exudates from skin lesions and tissue biopsy. The only significant hematologic finding may be elevated eosinophils which may constitute up to 30 per cent of the differential count.

Definite diagnosis is established by finding the spherules of *C. immitis* in these specimens or by positive coccidioidomycosis cultures and positive serology which require 10 to 20 days.

Since many conditions may present similar symptoms and radiographic appearances, this organism must be cultured to achieve an exact diagnosis. However, since a number of cases of coexisting pulmonary coccidioidomycosis and tuberculosis have been reported (Stein, 1953; Swasey and Grant, 1974) those patients with confirmed coccidioidomycosis must be thoroughly observed for long periods of time for evidence of concomitant tuberculosis.

In the treatment of miliary coccidioidomycosis, Amphotericin B is the best currently available preparation. This agent is administered intravenously and in the case of meningeal involvement, intrathecally as well. Oral administration, due to poor absorption by the gastrointestinal tract is not indicated. The current state of knowledge and administration of Amphotericin B has recently been reviewed (Bennett, 1974).

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TRACHEOSTOMY: EMERGENCY OR ELECTIVE?

CHARLES L. JOHNSON, M.D., F.A.C.S.

Tracheostomy is a well-known therapeutic and sometimes life-saving surgical procedure. As knowledge has evolved regarding technique of performance, post-operative care, and management of complications, tracheostomy has become a well-accepted, relatively safe procedure in medicine's armamentarium. The purpose of this paper is not to repeat what has already been well-covered in the literature, but to discuss in some detail the rationale and technique of "emergency" versus "elective" tracheostomy, which I feel receives too little attention in the literature.

To begin, I will rather blatantly state that, in my opinion, there is virtually *no* indication for the so-called "emergency" tracheostomy! I do not deny that there are frequently urgent situations requiring split-second decisions and action, so I will attempt to defend my statement in the discussion that follows.

HISTORY OF TRACHEOSTOMY

Perhaps a few comments regarding the inception and evolution of tracheostomy will prove both interesting and informative. The first tracheostomy was apparently performed by Asclepiades about 100 B.C., but we have no firm documentation of this fact. The feat was referred to by Galen in his writings about 150 A.D. Galen discussed tracheostomy, but never per-

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formed it, and, in general, felt it was not a worthwhile procedure since he didn't feel the tracheal rings would re-unite or heal following such a procedure.

Brasavola is credited with the first documented successful tracheostomy in 1546. He was justifiably proud of his success, since the barber-surgeon in attendance was afraid to perform the procedure.

An interesting sidelight on tracheostomy occurred in the late 18th century when Chovell, an English surgeon, convinced a man condemned to hang to have the procedure performed. Apparently the man was still alive when released from the gallows after the prescribed time for hanging, but died moments later. Chovell achieved a certain amount of fame among criminals for his attempt.

Scattered reports regarding techniques and complications then began to appear, but acceptance of the technique is credited to Bretonneau, when he did many life-saving tracheostomies for diphtheria and published his work in 1825. Thereafter, a rash of specially designed instruments, different techniques, and a spirited controversy regarding "high" or "low" tracheostomy appeared. Surgeons soon recognized that it was easier, quicker, and less dangerous to do a "high" tracheostomy because of less bleeding from the thyroid isthmus and neck vessels, and easier identification of landmarks.

It remained for Jackson in the early 1900's to point out the dangers of stenosis when the cricoid cartilage has been damaged, and "high" tracheostomy has generally, and properly, fallen into disrepute (see Figure 1). He also modernized the technique for tracheostomy, the basics of which remain in use today.[1]

INDICATIONS

The indications for tracheostomy have been well-outlined by Newman (see Table 1)[2]. Nelson further simplifies the indications by stating that they can be broadly categorized as 1) mechanical obstruction, or 2) secretional ventilatory obstruction.[1] The single category I'm concerned with in this discussion is the *acute* airway obstruction such as may occur when a foreign body is aspirated. I agree that many times the 20 to 30 minute elective tracheostomy performed with an endotracheal tube in place, with meticulous attention to hemostasis, careful sterile technique, in a fully equipped operating room with proper surgical assistance and nursing help, can be condensed into a procedure lasting only a few minutes or less, done with local anesthesia, packing to control bleeding, and very little assistance. Generally, however, this is still done in hospital, if not operating room, environment. In the hospital, there is at least some attention to sterile technique. There is equipment available in the

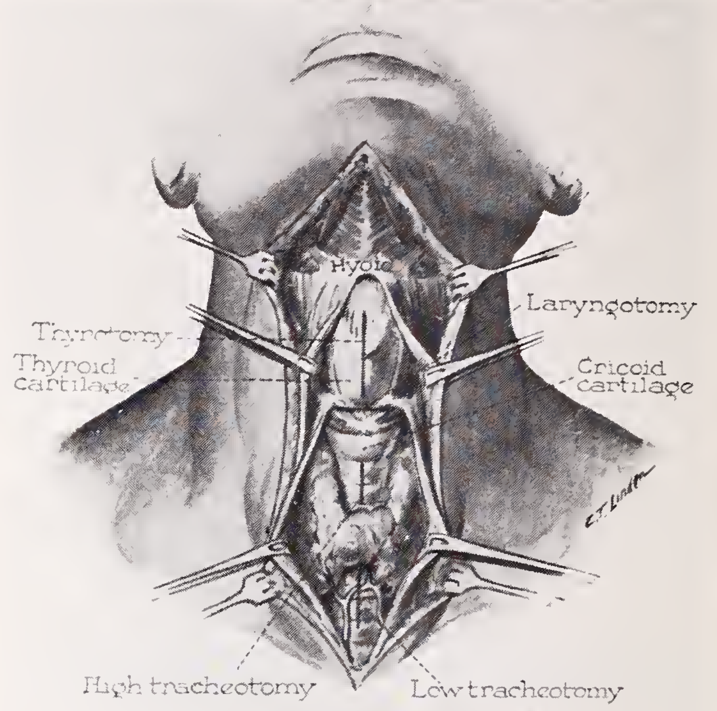

Fig. 166 Thyrotomy, laryngotomy and tracheotomy incisions.

Figure 1.
Sites of Tracheostomy. (Reproduced with permission from Thorek, Anatomy in Surgery, ed. 2, Philadelphia, J. B. Lippincott, p. 223.)

TABLE I
Indications for Tracheostomy[2]

- I. To Bypass Airway Obstruction
  - A. Acute
    - 1. Foreign Body
    - 2. Infection such as Diphtheria or Ludwig's Angina
    - 3. Glothic edema from anaphylaxis
  - B. Chronic
    - 1. Laryngeal Trauma
    - 2. Bilateral Recurrent Nerve Palsy
    - 3. Tumors
  - C. Acute Obstruction of Small Airways
    - 1. Bronchiolitis
    - 2. Status Asthmaticus
- II. To Separate Larynx from Pharynx
  - A. Head and Neck Surgery
  - B. Central Nervous System Disease
- III. To Facilitate Aspiration of Bronchial Secretions
  - A. Bronchiectasis
  - B. Exudative Chronic Bronchitis
- IV. To Permit Prolonged Artificial Ventilation
  - A. Ventilatory Failure—Primarily Extrapulmonary
    - 1. Central Nervous System Depression (Brain Trauma, Intoxication or Infection)
    - 2. Neural, Myoneural or Muscular Depression (Myasthenia Gravis, Postoperative Pain, Poliomyelitis)
    - 3. Damage to the Bellows Mechanism (Crushed Chest, Severe Diaphragmatic or Upper Abdominal Trauma)

case of severe hemorrhage, and the potential for obtaining more help if necessary.

No — I'm not concerned with the "fast" or "slow" tracheostomy performed in the hospital. The situation I'm describing is the adult who suddenly aspirates a piece of meat in a restaurant, is in acute, severe respiratory distress, and rapidly turning cyanotic. Under these circumstances, operating alone, with only a "dirty" pocketknife, no light, and no antisepsis, I think the performance of a "fast" tracheostomy is fraught with danger.

When a physician is confronted with such a situation, there are several simple measures that require only a few seconds that should be tried first. 1) Reach into the pharynx with the fingers to attempt removal of the foreign body, 2) Sudden compression of the chest cavity by putting the arms around the victim's chest and squeezing,[3] 3) Sudden pressure on abdomen to raise the diaphragms and increase intrathoracic pressure,[3] and/or 4) a sharp blow between the scapulae, with the patient's head down will sometimes stimulate a cough. If these fail, then I believe a *cricothyrotomy,* not a *tracheostomy,* is indicated.[2, 4, 5] As noted previously, I don't have any basic disagreement with the literature in general — I simply feel too little emphasis has been made regarding the rare, but very real, indications for cricothyrotomy, especially for physicians trained in other than surgical fields.

TECHNIQUE

The technique of tracheostomy is fairly well-standardized. (See Figure 2, A through D-1) Either a longitudinal mid-line incision or a transverse incision 2 to 3 cm. above the supra-sternal notch can be used. I prefer a transverse incision since I feel exposure is very adequate and the cosmetic effect after healing is superior to that of a longitudinal incision.

An important point is the positioning of the patient. Mild hyperextension of the neck is desirable, but severe hyperextension may compromise the existing airway and does not improve exposure. Also, the nose should be pointing straight forward. If the head is turned slightly to one side or the other, palpation of the thyroid and cricoid cartilages becomes difficult and inaccurate.[1]

The strap muscles are separated in the midline and retracted laterally. The thyroid isthmus is identified and retracted upward if possible, or divided between clamps if it's not possible to retract it adequately.[1, 2, 4, 6] The trachea can then be identified and I prefer to insert a tracheal hook at this point and apply firm traction anterior and cephalad to assure positive control of the trachea.

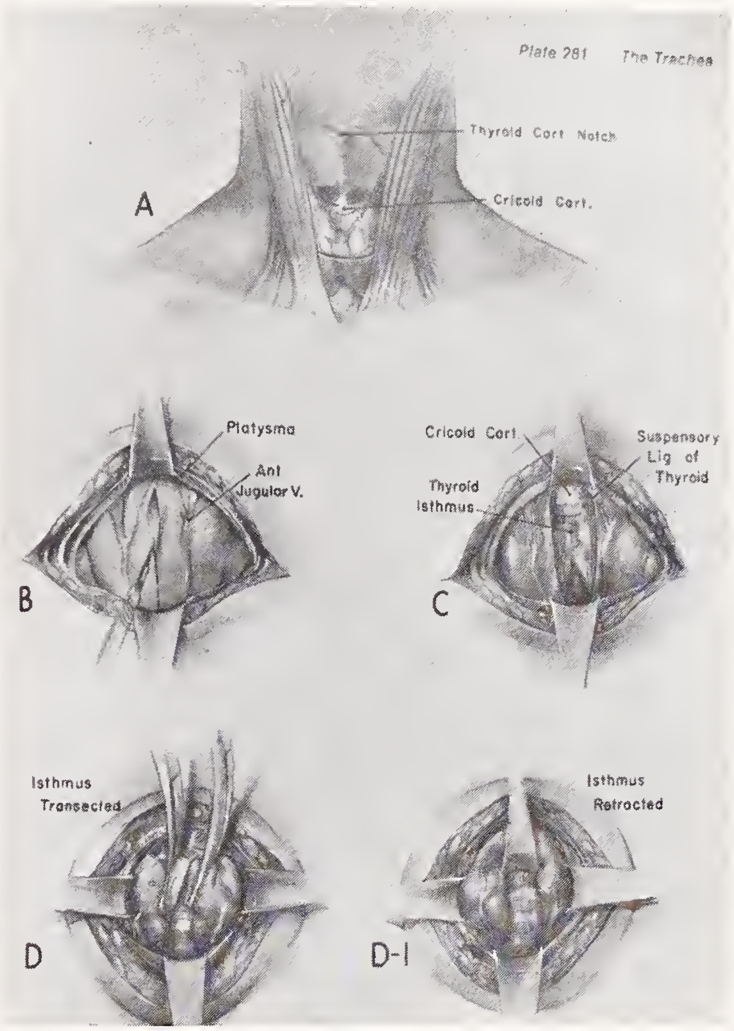

Figure 2.
Technique of Tracheostomy. (Reproduced with permission from DeWeese and Saunders, Textbook of Otolaryngology, ed. 3, St. Louis, 1968, The C. V. Mosby Co.)

The opening in the trachea, whether it be a vertical incision, a cruciate incision, or excision of small window, should be made below the first tracheal ring and above the fifth tracheal ring. The first tracheal ring should be avoided in order to prevent damage to the cricoid cartilage and subsequent stricture. The fifth tracheal ring will retract into the chest when hyperextension of the neck is released, and this retraction may cause the tracheostomy tube to become dislodged.[1]

The tracheostomy tube is then inserted and held in place by umbilical tapes attached to the flanges on the tube and tied around the neck. Unless the skin incision was excessively long, it's usually not advisable to place sutures in the skin. The skin should remain open for adequate drainage.[1]

If a "fast" tracheostomy must be done, the technique is nearly the same. Jackson, in 1900, presented his "feel" technique and it remains useful. The skin incision is made, immediately extended deeper in the midline, the trachea is located by feel, a vertical incision through second through fourth tracheal rings is made, and the tube is inserted. No attempt is made to control bleeders, or to specifically identify the thyroid isthmus. Bleeding is then controlled with packing *after* insertion of the tube.[7] In theory, a 30-minute procedure can thus be condensed into one requiring less than a minute — although practically speaking, it still usually requires several minutes.

Returning now to the patient who has aspirated a foreign body and sterile equipment and hospital environment are not available. This situation is the one where cricothyrotomy is indicated. The technique is simple. The patient is placed in the supine position, neck mildly hyperextended, and nose aligned in the midline. Palpating downward from the chin, in the midline, the first large prominence is the thyroid cartilage (Adam's apple). (See Figure 3.) Just caudad to the thyroid cartilage the palpating finger falls into a small depression, then encounters a second much less prominent protuberance. This second protuberance is the cricoid cartilage and the small depression identified is the location of the crico-thyroid membrane. There are no major vessels in this area. A small incision is made in the skin overlying the membrane, and then, literally, a stab is made to deepen the incision and enter the trachea.[2, 5] The airway can then be kept open by any means at hand — a spoon handle or dull knife blade inserted and twisted sideways, or the plastic barrel from a ball point pen.

On occasion, the cricothyrotomy itself will be a definitive procedure. Once the patient is able to inspire, he may be able to initiate a cough adequate to dislodge the foreign body and the crisis will be resolved. Under these circumstances, the airway can be removed, and the stab wound will heal with no more than the usual precautions regarding cleanliness and infection. Be sure to check the patient's tetanus history and administer a booster if necessary.

If, however, the airway will be required for a prolonged period of time, the patient should be transferred to a hospital, and an elective tracheostomy performed within 12 hours. As already noted, disruption of the thyroid-cricoid cartilaginous complex is accompanied by an extremely high incidence of stenosis and stricture formation, but if an elective tracheostomy is done within 12 hours, and the cricothyroid airway removed, there is very little danger of this complication.[2, 4]

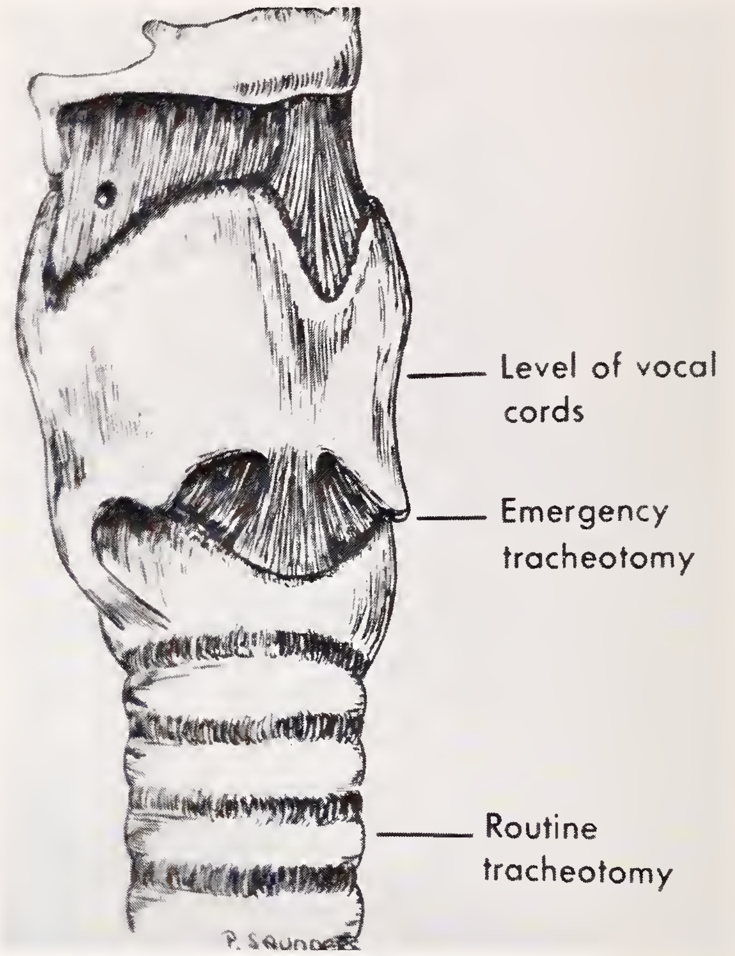

Figure 3.
Location of Cricothyroid Membrance. (See text.) (Reproduced with permission from Lore, An Atlas of Head and Neck Surgery, Vol. 2, Philadelphia, W. B. Saunders, p. 689), 1973.

SUMMARY

An admonition to avoid standard tracheostomy techniques under urgent circumstances outside a hospital environment is presented. Under these circumstances, it is felt that an adequate airway can be provided faster and more safely by performing a cricothyrotomy.

The technique of elective and urgent tracheostomy, and emergency cricothyrotomy are discussed. An emergency cricothyrotomy should be followed by an elective tracheostomy within 12 hours, to avoid the complication of stenosis.

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FIVE YEARS AS EDITOR-IN-CHIEF

This issue of *Arizona Medicine* will be the last one for me to supervise as Editor-in-Chief since assuming this responsibility upon election by the House of Delegates of the Arizona Medical Association annually since April 1970. Having withdrawn from the 1975 nominations because of other responsibilities and plans, I wish my successors well. The magazine has prospered as a means of scientific and organizational communication because of the support of a willing and able staff, notably Bruce Robinson and Joanie Bruner, the Publishing Committee, the Editorial Board, and particularly its contributors. The Editor serves as arbiter, quarterback, problem solver and tries to maintain a degree of professional decorum and taste in the publication of *Arizona Medicine*. He also serves as an active Director of the Arizona Medical Association. Five years of experience in these areas provides a firm basis for an abiding respect for organized medicine in Arizona and apprehension about social forces that want to remove the decision-making process in health care delivery from the influence of physicians who are taking care of patients. *Arizona Medicine*, as the representative of the doctors of Arizona, must and will continue to be increasingly effective in the future in behalf of both the public and the medical profession.

John R. Green, M.D.

Editor's Page

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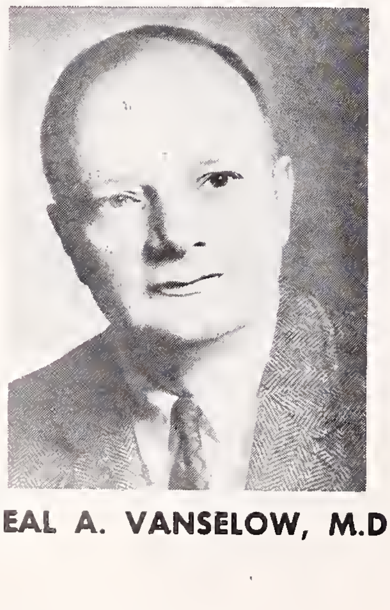
Dean's Page

CLINICAL PHARMACOLOGY ACTIVITIES OF THE COLLEGE OF MEDICINE



NEAL A. VANSELOW, M.D.

In recent years studies of health manpower needs in this country have identified clinical pharmacology as an area which merits further investment. The College of Medicine at the University of Arizona has undertaken an active program in Clinical Pharmacology. This program encompasses an increase in staff size and an augmentation of activities. The goals of the interdepartmental division of Clinical Pharmocology include:

(a) Increasing the supply and availability of well-trained, experienced, clinical pharmacologists from a wide range of clinical disciplines.

(b) The teaching of therapeutic principles to medical students, house officers, pharmacists, nurses, faculty and practicing physicians.

(c) The development and assessment of new methods for teaching both basic pharmacology and clinical therapeutics.

(d) The active participation in both basic and clinical research devoted to a better understanding of drug action and the evaluation of clinical therapy.

(e) The collection and utilization of a fund of data on the therapeutic literature in a retrievable form which is a useful basis for making therapeutic decisions and is available to all practitioners.

Over the past year the activities of our staff have been increasing rapidly in order to fulfill these goals.

There are nine members of the medical staff of the University of Arizona who are full time members of the clinical pharmacology staff.

Numerous clinical specialties are represented including Internal Medicine, Pediatrics, Anesthesiology, Oncology, Rheumatology and Neonatology. In addition, our Pharmacology Department has many valuable, experienced personnel who add significantly to our teaching, research and training in such fields as drug metabolism, toxicology, medicinal chemistry, lipid metabolism, cancer chemotherapy, cardiovascular pharmacology, CNS pharmacology, and drug abuse.

We have recently received a 3-year training grant and have three first-year post-residency physicians in training as Clinical Pharmacology Fellows. We expect to add 2 to 3 additional fellows in the coming year.

The Department of Pharmacology and our clinical pharmacology staff are committed to and are actively involved in the teaching of therapeutics to medical students, housestaff, practicing physicians, nurses and pharmacists. We specifically plan to develop useful teaching materials for the most common disease entities seen in practice and to make these available to all Arizona physicians. We are already involved in the development and testing of teaching methods for medical students. We plan to expand this program to develop and test optional teaching methods and materials for house officers, paramedical personnel and practicing physicians aimed at increasing awareness of rational therapeutics, evaluation of clinical therapy, drug interactions and the recognition of adverse drug effects.

Research currently underway by our staff is directed at improved rational therapeutics. Many projects either directly or indirectly improve both patient care and an awareness of therapeutic principles in our house officers and staff. Research projects involving Hyptertension, Theophylline, Dilantin, Analgetics, Oral Hypoglycemics, Hepatotoxicity, Oral Contraceptives, Diuretics, Bioavailability, Infant Nutrition, Cancer Chemotherapy and Rheumatology are actively underway by various members of our staff in cooperation with members of various clinical and basic science departments of the College of Medicine.

The need for improved methods for teaching therapeutics is recognized by physicians, medical educators and professional societies. Discussions have been held with the Arizona State Board of Medical Examiners regarding the possibility of utilizing our program to teach therapeutics to practicing physicians. Participants would answer programmed questions until a passing grade was attained, and would receive post-graduate credit hours for their efforts.

It should be emphasized that the teaching materials will be developed for use by the physicians at their leisure and in their own locale. This compares to the present methods of continuing education programs which involve travel to a central location with a loss of patient care time. In fact, there is little evidence that the present continuing education methods are of value in terms of actual knowledge gained or altered practice. It is our belief that the information gained is critical and not the time spent acquiring this information. We believe (and we expect to evaluate this belief) that physicians can learn more effectively if they are allowed to learn at their own pace in their own environment. In addition, the loss of patient care time in travel is especially critical in Arizona where distances to outlying communities are great and attendance at conferences involves significant travel.

The Clinical Pharmacology Staff of the University of Arizona Medical School is actively involved in numerous teaching, research and patient care activities devoted to improved therapeutics and patient care in the State of Arizona.

Neal A. Vanselow

Obstetrics and Gynecology

ENDOCRINE ASSAYS FOR THE OBSTETRICIAN AND GYNECOLOGIST – Part II

WAYNE HEINE, M.D.

ESTROGEN

Estrogen measurement utilizing colorimetric techniques, or the newer saturation analysis technique of analysis have aided greatly in understanding the female reproductive cycle. It has been shown that serum estradiol, the most potent biological, most naturally occuring estrogen, varies from 1 to 25 ngs. percent during the mentstrual cycle. Because of this wide range of normal, we have not found the serum or urinary estrogen analysis particularly useful in evaluating the non-pregnant female patient with an endocrine disorder. By simply giving a progesterone provocative test one will be able to ascertain whether there are physiologic amounts of estrogen present. One may also evaluate vaginal cytology or vaginal pH to determine estrogen activity. We find serum estrogen analysis most useful in monitoring the patient receiving exogenous gonadotrophin therapy for stimulation of ovulation. Since serum estrogens are now available, stimulation of ovulation with exogenous gonadotrophins will hopefully become a safer procedure.

The estrogen assay which has received the greatest utilization is the evaluation of serum or urinary estriol in pregnancy. A single estriol determination has limited usefulness, but serial serum or urinary estriols measured after the 28th week of gestation may aide the physician in determining the optimum time for delivery for improved fetal survival.

PROGESTERONE

Analysis of serum progesterone or its urinary metabolic pregnandiol has limited usefulness in the day to day care in Obstetrics and Gynecologic patients. Elevated values during the second half of the menstrual cycle suggest ovulation. Daily analysis of these hormones may give a clue of an inadequate luteal phase but basal body temperature charts along with an endometrial biopsy will give similar information at much less cost. In pregnancy, urinary pregnandiol values as well as serum progesterones values have a wide range of normal and appear to be related to placental weight. It does not have a predictive value as to the outcome of the pregnancy.

ANDROGEN

For those patients who exhibit evidence of excess androgen production, such as increased sexual hair, alteration of fat distribution, decrease in breast size and clitoromegally, the measurement of serum or urinary androgens is indicated. The Zimmerman Colormetric reaction used in measurement of urinary 17 Ketosteroids has been known for almost forty years. It is a useful test in measuring such androgens as androsterone and etiocholanolone and dehydroepiandrosterone. It does not however measure the most potent naturally occuring androgen, testosterone, which is not a 17 Ketosteroid. There are many drugs which interfere with the measurement of urinary 17 Ketosteroids. Drugs which increase urinary 17 Ketosteroids are triacetyloleandomycin, striacetyleandomycin, spironolactone, penicillin, phenoglycodol, phenothiazines, ethinamate and nalidixic acid. Those which decrease urinary 17 Ketosteroids are chlordiazepoxide, etryptamine acetate, and reserpine.

Utilization of dexamethasone suppression test will sometimes aid in determining whether the excess ketosteroids are being produced in the ovary or the adrenal gland.

The development of radioimmunoassay methods has allowed us to measure both plasma testosterone and androstenedione in a small amount of serum at reasonable expense with good accuracy. Patients with polycystic ovarian disease will usually have values in the upper range of normal to 2 to 3 times normal range associated with elevated serum luteinizing hormone. Ovarian androgen producing tumors are usually associated with very high levels of testosterones and very low levels of gonadotrophins. Patients with adrenal disease usually have only slightly elevated testosterone, low levels of luteinizing hormone, but will have an elevated serum DHEA, dehydroepiandrosterone, which now can also be measured in serum or urinary 17 Ketosteroids.

CORTICOSTEROIDS

The gynecologist is often called upon to evaluate the obese patient with menstrual irregularity. These patients are often referred with the diagnosis of Cushing's Syndrome. Since excess

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corticoid excretion is a very rare phenomenon, these patients will seldom have Cushing's Syndrome. The majority of patients may be differentiated from Cushing's Syndrome with just history and physical examination. Should the diagnosis of Cushing's Syndrome need to be confirmed the patient either may be evaluated with urinary or serum corticoid levels. In the past, the majority of hospitals in the country have used the Colorimetric Methods involving Porter-Silber Chromogens. Since medication such as choloral hydrate and phenothiazines interfere with these colorimetric methods, the patient should be off of all medications for at least 48 to 72 hours prior to evaluation.

The initial serum methods also utilized the Porter-Silber Chromogen for determination of corticosteroids. Now, more specific competitive binding and radioimmunoassay techniques have been utilized for determining serum cortisol values. The obese patient also may have slightly elevated levels of serum cortisol. A way of differentiating between an obese patient and a patient with Cushing's Syndrome is to obtain a 9:00 a.m. baseline cortisol then give the patient 1 to 1.5 mgs. of dexomethasone at 11:00 p.m. and repeat the 9:00 a.m. cortisol the following morning. If the patient does not have Cushing's Syndrome, levels of serum cortisol will usually fall to below measurable levels.

Patients with a decreased adrenal function as in Addison's Disease usually will have decreased levels of serum and urinary cortisols, although many they will fall within the low normal range. They will usually have a loss of diurnal variation and will often require A.C.T.H. stimulation tests to confirm the diagnosis of Addison's Disease.

THYROID

Patients with increased thyroid activity can usually be diagnosed by history and physical examination. The patients with decreased thyroid function may have symptoms like many patients seen in the gynecologist's office, such as increased weight, lethargy and constipation. Again with careful history and physical examination, these can usually be differentiated. With the newer methods of competitive protein binding and radioimmunoassay of serum T_4 and the indirect binding methods of T_3 uptake, one can more accurately evaluate thyroid function.

Radioimmunoassay and competitive protein binding methods for serum T_4 are much more precise, as inorganic iodine materials will not interfere with these determinations. Most medications or physiologic states which alter thyroid binding globulin capacity will alter T_4 values. Therefore it should be remembered that pregnancy or any estrogen containing medication or a congenital increase in thyroid binding globulin will give one an elevation of serum T_4. Those conditions which may decrease thyroid binding globulin, such as the nephrotic syndromes, severe liver failure, drugs such as diphenylhydantoin, phenylbutazone and androgens, will give increased values for T_4.

Serum triiodothyronine, T_3, has been measured by radioimmunoassay and competitive protein binding, but the procedure is lengthy and time consuming. T_3 is usually measured by indirect binding methods and reported as a percent uptake of T_3. Normal is usually between 25 and 35% uptake. They are inversely affected compared with the T_4 when thyroid binding globulin is altered. A pregnant patient will have an elevated serum T_4 along with a decreased serum T_3 uptake.

In confirming the diagnosis of abnormal thyroid function in a patient who has been on estrogen therapy or has been on thyroid hormone in the past, the patient should be evaluated approximately six weeks after discontinuing therapy.

SUMMARY

The above endocrine assays include the majority of tests needed in evaluating females with reproductive cycle problems. With a careful history and physical examination and utilizing a progesterone withdrawal test, one can eliminate the need for many laboratory tests.

Some of the more specialized tests such as the prolactin water load test, Clomid stress test and various releasing factor tests depend on the availability of specialized laboratory techniques and are best left to areas where they are available. These also will soon be generally available to most practitioners. It will then be much easier to rule out life threatening disorders such as pituitary tumors. It is therefore important to become aware of what tests are indicated and the interpretation of these tests so that the greatest amount of information at the least cost, can be obtained.

Clinical Oncology In Arizona

THE MEDICAL ONCOLOGY NURSE CLINICIAN

JUDITH C. DEAN, R.N., M.S.
PATRICIA L. DOMBROWSKI, R.N., B.S.
KATHERINE S. GRIFFITH, R.N.

This new section in Arizona Medicine is specifically targeted to the subject of cancer care in the state of Arizona. Recognition of the importance of cancer management has been underscored by the establishment of the conquest of cancer as a national goal. In this column, current concepts in cancer management and recent advances in cancer research that are relevant to Arizona, will be discussed each month. Cancer therapy is currently changing at an extraordinarily rapid rate, and the views expressed on this page should not be considered as static recommendations. The editors of this column will select key topics and invite interested physicians and allied health professionals from Arizona to write components related to areas of their expertise in cancer.

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Advances in cancer chemotherapy have led to the development of a new specialty for nurses working in centers which have a major focus on cancer therapy. The new role is that of the medical oncology nurse clinician. The purpose of this paper is to describe the role of the medical onocolgy nurse clinician as it has developed over the past year in the clinical investigative program of the Section of Hematology and Oncology of the University of Arizona. Each of the authors functions in the role of nurse clinician in the University's Medical Oncology program.

The primary objective of the medical oncology nurse clinicians at Arizona Medical Center and the Veterans Administration Hospital in Tucson is to coordinate patient care through all phases of treatment. This span includes in-patient and out-patient treatment, home-care referrals, patient and family teaching or counseling, discharge planning and long-term followup. They also provide in-service education and consultation for hospital staff, maintain liaison with the pharmacy service to coordinate treatment with chemotherapeutic agents, and participate in research and community service.

Each nurse clinician carries a patient case load in the hematology-oncology outpatient clinic. Patients receiving therapy in accord with well defined protocols often require frequent treat-

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ments between physician visits. Such patients are seen by the nurse clinician for chemotherapy, immunotherapy, plasmapheresis, or other nursing treatments. Response to therapy or disease progression and/or potential toxic effects of treatment are monitored by the nurse clinician using physical assessment skills and evaluation of blood counts and selected blood chemistries. For example, a specific patient might have the white blood count, platelet count and oral mucosa followed once or twice weekly to evaluate a major potential toxicity anticipated from a specific form of therapy. In that way, drug dosages can be "fine-tuned" for maximum efficacy. At these nursing visits, information given previously by the physician about the patient's disease and its respective treatment is reinforced or expanded as necessary. The patient and his family are instructed in self-care, diet, hygiene, protection against infection and bleeding when blood counts are low, expected side effects of treatments, and reporting unusual symptoms or toxic effects.

Many family members have been taught by the nurse clinicians to administer subcutaneous chemotherapy and BCG immunotherapy via scarification. This gives the patient more time at home with his family and provides a feeling of usefulness and increased independence while strengthening the family unit.

The time during which chemotherapy or other treatments are given is utilized by the nurse clinician to establish a good rapport with the patient and his family. This paves the way for individual and family counseling as needed through the many stresses of cancer as a chronic illness. Knowledge of the patient and his problems gained in the out-patient setting is useful in coordinating the patient's care when it becomes necessary for him to be admitted to the hospital.

The medical oncology nurse clinician has an active role with the care of the inpatients as well as the outpatients. The nurse clinician attends medical rounds to remain current of the patient's treatment plan, and conducts nursing rounds during which nursing problems are identified. Due to the chronicity of their diseases, cancer patients frequently have many problems affecting all phases of their lives. Typical are distressed family situations, financial problems, and the fundamental task of keeping jobs. By allocating time to spend with the patient as a "listener," other problems which are real or potential sources of anxiety to the patient and his family can be discerned.

The nurse clinician participates with hospital staff on problem-solving development of patient care plans, and discharge plans, and communicates pertinent problems along with possible solutions to the nursing and medical staff. Other vital roles are as a link between inpatient and outpatient services and in referrals between various discipline areas of the hospital to provide integrated care for the patient and to prevent him from becoming "lost to followup."

There are other responsibilities associated with this emerging professional specialty. In investigational drug treatments, the nurse clinician is familiar with the protocols of both the Southwest Oncology Group and the University of Arizona. In this role, the nurse clinician cooperates with the medical oncologist and pharmacist by collecting and distributing relevant information on new drugs to all departments requiring such information, and she documents and reports new side effects and incompatibilities of drug treatments .

The nurse clinician participates in research by assisting with the collection of data and by keeping accurate records, along with direct interaction with the patients participating in the clinical research program. The role of the nurse clinician will undoubtedly expand considerably in the area of clinical research.

The nurse clinician has a professional responsibility to maintain an astute awareness of the latest clinical data in oncology. This may be accomplished through continued self-education in the formal or informal setting by attending teaching conferences, tumor management conferences, Medical Grand Rounds, and specialized seminars.

Considered experts in their field, the nurse clinicians are available as consultants regarding chemotherapy, immunotherapy, coordination of some diagnostic studies and investigational protocols. In addition to serving as a consultant for hospital staff, the nurse clinician is a resource person for community physicians and nurses, participating in planning and presenting workshops for nurses in the community, and supporting public education regarding current concepts in cancer management.

Seminars in Endocrinology and Metabolism

POTPOURRI: COMMENTS ON THE SPECTRUM AND NATURAL HISTORY OF DIABETES MELLITUS

FRED D. HOFELDT, M.D.

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

MARSHALL B. BLOCK, M.D. **Editor**

There appear to be various stages in the natural history of diabetes mellitus. It has been proposed, as shown in Figure 1, that there is a gradual progression from one stage to another ultimately leading to the florid variety of diabetes mellitus. Thus children who present in ketoacidosis with the usual garden variety of diabetes, are thought by some to probably rapidly move through the prediabetic, latent and chemical diabetic stages outlined in Figure 1. Although this has been documented for isolated cases, the evidence is inconclusive. There recently has been renewed interest in children who demonstrate mild abnormalities in carbohydrate tolerance. These patients are few in number and have only recently been studied in any depth. A recent symposium concerning the classification and diagnostic criteria for these type patients has just been published.[1] The evidence to date suggests that some of these patients do progress to the more serious varieties of diabetes mellitus. However, a good many of

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The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Department of the Army or of the Department of Defense.

these patients continue to exhibit only mild changes into adulthood. Treatment of children with this variety of diabetes mellitus is also in doubt. Some investigators have used insulin in an attempt to preserve residual beta cell secretion. Other physicians have utilized the oral agents to treat these patients. Longterm effects of both forms of treatment are unknown at this time.[1] In addition, in children as noted in Figure 1, the florid variety of diabetes mellitus can regress and give rise to mild abnormalities such as seen in chemical or latent forms of diabetes. Recently, studies have shown that renewal of beta cell secretion does take place in many of these patients.[2] The cause for the recovery and ultimate relapse of many of these patients is unknown but does bring up the possibility that there may be environmental or other factors which can be regulated so as to preserve endogenous insulin secretion.

Underlying this conception of the natural history of diabetes mellitus is that abnormalities in insulin secretion are at the basis of the disorder. This is demonstrated in Figure 2 which shows the relationship between the time, expressed in years, and the integrity of beta cell function. Classically patients with juvenile onset diabetes are thought to have lost beta cell secretory ability rapidly, although they may have some periods of recovery. On the other hand, there are some children, as shown in Figure 3, who have mild abnormalities in carbohydrate tolerance and appear to have elevated insulin levels due to peripheral resistance yet may actually have absolutely decreased amounts. The solid line in Figure 3 shows the normal life span of the beta cell. It demonstrates that with time mild abnormalities in carbohydrate tolerance should be expected especially in the older age population.

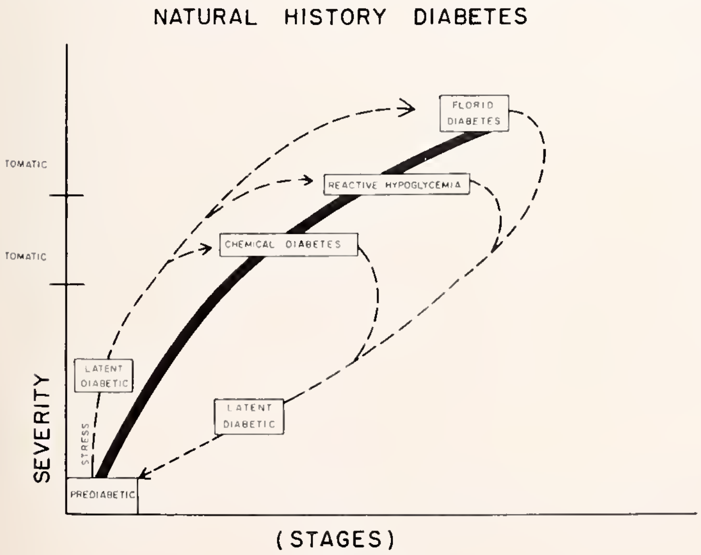

Figure 1.
Representation of the progression of diabetes through its clinical stages depicting the natural history of diabetes.

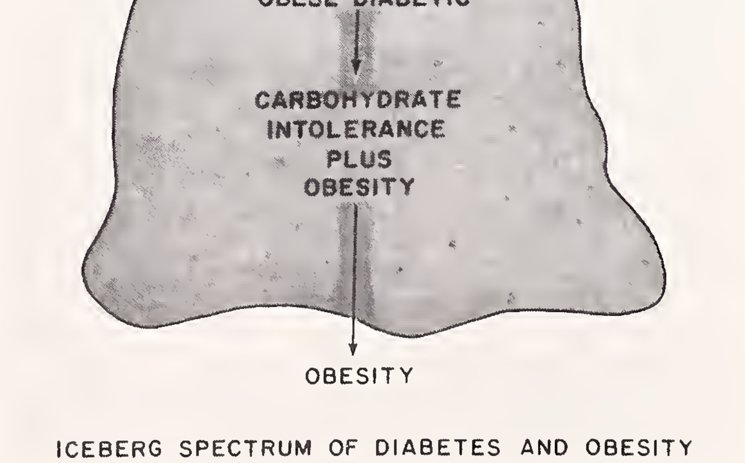
INSULIN REQUIRING DIABETIC
INTER FACE OR MARGINAL GROUP
OBESE DIABETIC
CARBOHYDRATE INTOLERANCE PLUS OBESITY
OBESITY
ICEBERG SPECTRUM OF DIABETES AND OBESITY

Figure 2.
Schematic representation of a diabetic population as to severity of diabetes and degree of obesity.

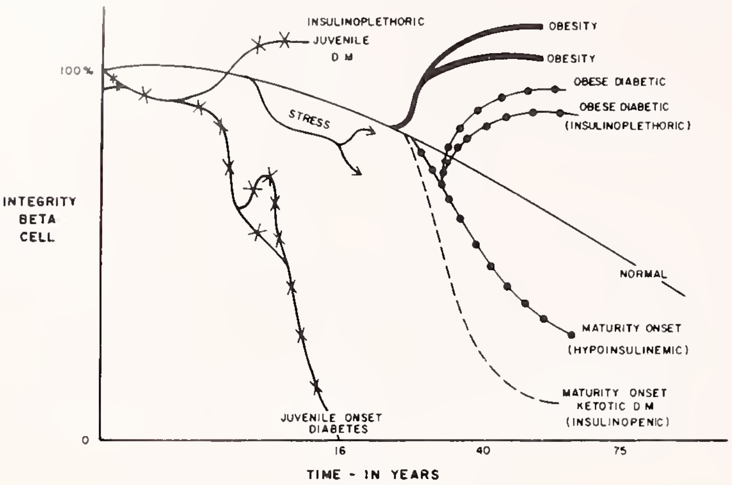

Figure 3.
Relationship of the severity of the diabetic state to the degree of insulin deficency as represented by the integrity of the beta cell for an insulin secretory capacity. The diabetic patients, thin and obese subjects, are compared to the normal loss of beta cell function with age.

Thus the normal criteria for carbohydrate tolerance must be relaxed as patients enter the sixth and seventh decades.

In keeping with altered criteria for diabetes mellitus, it has become apparent, as demonstrated in Figure 2, that obese patients may have demonstrable changes in carbohydrate tolerance which can range from mild to severe. Figure 3 dramatically demonstrates these findings. There probably is a large number of obese patients who do not demonstrate any abnormalities at all. However, there are some who do, which can be corrected with weight reduction. These patients, rather than having genetic diabetes mellitus probably should be classified as having the carbohydrate intolerance of obesity. On the other hand, there are obese patients who, no matter how much weight is lost, continue to demonstrate the abnormalities characteristic of diabetes mellitus. These patients should probably be classified as having genetic diabetes mellitus. The progression of these patients from the usually mild degree to the insulin-requiring state is variable and is not known with certainty. The vast majority as demonstrated in Figure 3 are usually controlled either with oral agents or diet. Only a small number require insulin. Clinically these distinctions are somewhat academic. However it can serve as incentive for patients to lose weight if they are informed that their carbohydrate intolerance may disappear with weight reduction. It is also obviously essential to demonstrate this to rule out the presence of underlying genetic diabetes mellitus. The obese patient who remains diabetic following weight reduction should be watched to be certain that he doesn't ultimately require insulin therapy. The thick solid lines in Figure 2 show that there may be relatively greater than normal secretion of insulin in obese patients yet they may still demonstrate abnormalities in carbohydrate tolerance. Recent evidence with isolated fat cells and lymphocytes from genetically obese rats and obese patients have shown decreased numbers of insulin receptors.

This may contribute to the resistance to the action of insulin noted in some obese patients and to their relative greater than normal secretion of insulin to combat it. However, it is difficult to know why these same patients have correction of their underlying metabolic abnormality following weight reduction. Since adipocytes do not disappear with weight reduction, only decrease in size, the number of receptors should remain the same. Perhaps a decreased cell size somehow enables insulin receptors to become more available.[3, 4] In contrast, non-obese adult onset diabetics may demonstrate several varieties of diabetes mellitus. They may show mild abnormalities which can easily be controlled with diet or they can demonstrate marked resistance to such forms of therapy and require exogenous insulin. These patients may have reduced insulin secretion as demonstrated by the black dots in Figure 2. An extreme would be those adult onset diabetics who present for the first time in ketoacidosis. This is demonstrated by the dash line in Figure 3. These patients lack significant insulin reserve during such an episode but may at a later date show some recovery of insulin secretion.[5]

Clinically one can thus see many varieties of diabetic patients as alluded to above. The classical example of the insulin deficient juvenile onset diabetic in ketoacidosos compared to the adult onset patient who is obese and requires diet for therapy are only two of the multiple variations which exist as outlined in Figure 2. Treatment of these several types of diabetic patients obviously is different an drequires understanding of their underlying pathology.

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Department of Health Services

MOVEIN' ON

JAMES L. SCHAMADAN, M.D.

This will be my last contribution to *Arizona Medicine* as Director of the Arizona Department of Health Services. By the time this is published you will be aware that I have moved to the Department of Economic Security. There I will take on the challenging administrative task of handling the reins of DES until such time as a permanent director is appointed. The Department of Economic Security is another agency which serves the people. My first activity will be to see if they are doing the right things to provide real service, and then to see that they are doing those things right.

My objectives for the Department of Health Services were reached when seven independent, health related agencies were absorbed and reorganized into one consolidated department and became a functioning mechanism. Except for the few bugs which inhabit any machine, the Department is now operating to provide the people of Arizona with greater service in the field of health. I feel confident that the mechanism is in place and that the Department will continue to operate efficiently. The faces may change, but the basic structure is solid.

We have used a number of approaches to solve some of the problems that have plagued public health in the past. I am particularly proud of our accomplishments involving the integration of direct services with the traditional public health activities. The groups receiving direct health services include the mentally ill, the aging, and children with crippling or potentially crippling defects. The quality of care these citizens receive through the Crippled Children's Services, the State Hospital, and the Pioneers' Home has been enhanced. Significant improvements have been made in the areas of environmental health, nutrition, education, and emergency medical services. As for Medicaid, the mechanism for paying the bills is there, if the state can come up with the money to pay them.

I feel that the Department of Health Services has developed into one of the top State agencies. Its budget should suffer only minimal cutbacks, even in these perilous economic times. Perhaps this is due to the confidence expressed in the operation of its programs and the relative good rapport the agency has enjoyed with the State Legislature. In addition, the department has a good number of competent and dedicated employees.

I am grateful to the Arizona Medical Association and especially to the Executive Committee for the cooperative relationship we have shared in the past. And I am confident that DHS and ArMA will continue to work together on health issues of mutual impact long into the future. Suzanne E. Dandoy, M.D., has been appointed Acting Director for the Department of Health Services. Dr. Dandoy has been with the State Health Department since 1970 and most recently served as the Assistant Director for Community Health Services.

Although I view this assignment with the Department of Economic Security as an administrative challenge, I have not abandoned my interest in medicine. My long range plans will find me back practicing medicine . . . somewhere in the world.

Topics Of
Current
Medical Interest

BASICS OF "INFORMED CONSENT" FOR ARIZONA PHYSICIANS

The following article was prepared by the Phoenix law firm of Snell & Wilmer at the request of the Arizona Medical Association especially for this publication. The authors have sought to synthesize the vast amount of legal literature on "informed consent" to produce a brief but useful guide to physicians who practice medicine in this State. It cannot be emphasized too strongly, however, that such a treatment of a very complicated and dynamic area of the law necessarily involves generalizations and omits discussion of many exceptional circumstances which either have been or might be recognized by the courts as requiring a result contrary to the general rule. The law of "informed consent" is particularly subject to the observation that "there is an exception to every rule." However trite such a comment may appear, its statement is a prerequisite to offering the following discussion. With this in mind, it hoped that the following article may be useful in providing some general guidelines and principles in an area of major concern to both the medical and legal professions.

INTRODUCTION

Physicians are becoming increasingly concerned about the legal doctrine of "informed consent" and, specifically, about what it means in terms of a physician's rights and obligations under the law. The law in the State of Arizona on this subject is set forth in the opinions of two Arizona Courts of Appeal written in connection with two separate cases — *Shetter v. Rochelle,*[1] decided in 1965, and *Fiske v. Soland,*[2] decided in 1968. The primary purpose of this article is to explain in concrete terms the substance of these judicial opinions. However, because both cases were decided more than six years ago and in many respects do not provide entirely clear and definite guidelines for physicians, this article will also discuss a recent (1972) decision of the California Supreme Court in the case of *Cobbs v. Grant.*[3] The *Cobbs* opinion discusses "informed consent" in far greater detail than does either of the Arizona cases. Furthermore, although they do not represent the law in the State of Arizona, the opinions of the Supreme Court of California historically have had a substantial influence on Arizona courts in relatively unsettled areas of the law. Because "informed consent" is such an area, and because the *Cobbs* decision is, at least in theory, more demanding than the two Arizona cases in terms of a physician's legal duties, Arizona physicians should be aware of the substance of the California Supreme Court's opinion. In an era of increasing judicial sensitivity to consumers' rights, *Cobbs* can be viewed as an indication of a trend which deserves the attention of all physicians.

Under most circumstances surrounding the practice of medicine, the law requires a physician to obtain the consent of his patient prior to the administration of any medical procedure. As a matter of fact, a patient who possesses normal mental capability consents to medical treatment by virtue of his solicitation of a physician's aid and his submission to the recommended treatment or tests. However, the law recognizes that the average patient lacks even a general understanding of medicine, and that he might consent to a particular treatment or procedure while ignorant of the possible or even probable consequences. The courts therefore look behind the actual act of consent by a patient, regardless of the manner in which the consent was given, to discover whether he gave a knowing or "informed" consent. In order to afford legal protection to the physician, a patient's consent must have been given at a time when the patient possessed a sufficient level of understanding relating to the procedure to which he consented. Furthermore, an uninformed consent is not cured by the fact that a patient did not request the required information; it is the physician's responsibility, as a practical matter, to see to it that his patient possesses sufficient knowledge for the purpose of giving an "informed consent." In most cases, therefore, although the inquiry will focus on the physician's disclosures to the patient prior to the time that consent was given.

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[1] 2 Ariz. App. 358, 409 P.2d 74 (1965).
[2] 8 Ariz. App. 585, 488 P.2d 429 (1968).
[3] 8 Cal. 3d 229, 502 P.2d 1, 104 Cal. Rptr. 505 (1972).

Indeed, the most difficult problem in this area of the law is to describe the content of the required disclosures in a way that will be useful to a practicing physician. Generally, the disclosures are regarded by the courts as falling within either of two categories: (1) information relating to the nature and probable consequences of the proposed treatment and (2) information relating to risks of and alternatives to such treatment. The distinction is sometimes hard to draw and both kinds of information need to be disclosed in virtually all circumstances, but the two categories will be used in the following discussion because they provide a convenient means to conceptualize the physician's duty of disclosure.

THE NATURE OF THE PROCEDURE AND THE PROBABLE CONSEQUENCES

The opinion of the Arizona Court of Appeals in the *Shetter* case was concerned primarily with the first category of disclosures. The facts in that case involved the surgical removal of the lens from a patient's eye, and the court held that a physician is legally required in such cases to disclose such information as the patient needs to understand "substantially the nature of the surgical procedure attempted and the probable results of the operation."[4] The physician in *Shetter* was found by the court to have made satisfactory disclosures, and the specific facts of the case serve as a good example of how this can be done. After examining the patient, the physician, an ophthalmologist, discovered that the patient was suffering from cataracts and that removal of the lens would be necessary for the restoration of good vision with the use of a contact lens. The physician explained these facts to the patient and then described the proposed surgical procedure in his office by using a model of an eye. The patient was also told that the operation would be performed under general anesthesia and that it would take between eight and twelve months for the operations on both eyes and the adjustment from the operations. The patient was warned to remain absolutely still after the operation since the first thirty-three hours would be the most important for her eventual recovery. On this basis, the patient was held to have given an "informed consent."

Generalizing the rule announced in *Shetter*, one can conclude that before a physician prescribes or administers any medical test, medication, surgery, or treatment of any kind, he has a duty to explain to the patient in plain language the nature of the procedure (*e.g.*, an incision, a chemical alteration, or radiation bombardment), the parts of the body which will be affected, and the probable consequences to the patient during the procedure itself and during the period of recovery. Furthermore, the extent of such disclosures will have the effect of placing a limit on the consent which is given and, therefore, on the physician's permissible treatment. A patient must have an understanding of all procedures to which he is subjected; if the disclosures relate to a limited procedure, then the consent is also limited to that extent.

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[4] 2 Ariz. App. at 370, 409 P.2d at 86.

INHERENT RISKS AND ALTERNATIVES

The second category of disclosures are required in addition to those described above because, in the eyes of the law, the relationship of a patient to his physician involves a high degree of trust and confidence on the part of the patient. The standards of conduct to which a physician is held are more demanding than those which apply to the seller of ordinary goods or services in the marketplace. Rather, the duties which a physician owes to his patient resemble those imposed on a trustee. Where courts recognize that a "trust relationship" exists between two individuals, the trustee (the person in whom another places his trust) will be required to act with undivided loyalty to the trustor. Specifically, the trust and confidence which the patient places in his physician gives rise to a duty on the physician's part to disclose certain information prior to the commencement of any medical treatment or procedure, or to withhold certain information, depending in each instance on what is in the best interest of the patient. Thus, a physician might be required under this duty to disclose not only the probable consequences of a proposed treatment, but consequences that are regarded as a remote possibility as well. He might be required to describe alternative procedures in addition to the nature of the one recommended. In any case, the legal sufficiency of disclosures relating to possible complications and alternative treatments will *not* be determined with reference to the fact that a physician would be inconvenienced or burdened by informing the patient of such fact; rather, the actual disclosures will be judged with reference to what a physician loyal to the interest of his patient would have disclosed.

The facts of the *Shetter* case also provide an example of the second category of disclosure. As a result of the operation in which the patient's lens was removed from her eye, she developed secondary glaucoma requiring further surgery. The patient sued the ophthalmologist who removed the lens, alleging that he had failed to satisfy his duty to disclose the possibility of such complications and that the patient had, therefore, not given an "informed consent." Unfortunately, the court disposed of the patient's lawsuit without deciding whether the physician breached his duty under the above facts. There was expert testimony, however, that the medically recognized risk of failure in that operation was between one and three percent. A reasonable prediction would be that in future cases involving a similar risk of serious complications, the question whether a patient has given an "informed consent" absent such information will be left to the trier of fact, *i.e.*, jury or judge.

The *Shetter* opinion did explicitly announce certain guidelines and principles applicable to the "informed consent" problem. Most important, it is clear that a physician is n*ot* obligated to disclose *all* possible risks, diagnoses or alternatives which may exist as inherent in a recommended medical treatment for each and every patient. A physician must act with undivided loyalty to the best interests of his patient, and such considerations take precedence over the general desirability of a full and complete disclosure of all pertinent facts. For example, if a patient is known by the physician to be suffering from psychological or emotional problems, the physician need not disclose those particular facts. Under such circumstances, the required disclosures should be made to a close relative of the patient.

In its summary paragraph, the court stated that, in all cases, the substantive disclosures which a physician is required to make will be determined by what is considered good medical practice among the physicians in the community. In practical terms, this means that whenever the charge is made of a "failure to disclose" risks of complications or alternative treatments, both parties to the litigation will be entitled to present the opinions of physicians ("experts") on whether good medical practice would require the particular disclosure at issue. Further complicating any predictions is the rule, applicable to Board-certified physicians and presumably others that hold themselves out as specialists (that is to say, other than general practitioners), that a physician's duty will be determined by national standards of good medical practice in that specialty rather than community standards.[5] Because the question of whether a physician has fulfilled his duty to disclose will in almost every instance be left to the trier of fact to determine, no physician can be insulated with absolute protection.

As a matter of general procedure, however, and for the purpose of minimizing the risk of litigation, a physician would be well-advised to disclose the following in non-technical terms prior to prescribing any medical or surgical treatment or diagnostic tests: (a) a description of the nature of the treatment which he proposes and the diagnosis upon which it is based; (b) the probable consequences of the treatment including a realistic description of the convalescence and the expected benefits; (c) the general level of recognized risks of complications or failure inherent in the procedure and a description of those specific complications which are relatively serious and of those which are likely to occur with the greatest frequency; and (d) a similar explanation of alternative methods of treatment, including the alternative of no treatment at all. Where the physician recommends purely elective surgery, he must be especially careful to explain alternative treatments and risks. None of the above disclosures should be omitted unless the physician has a reasonable basis for believing that the health of the patient would be adversely affected by such disclosures. It is not sufficient that the recommended treatment is, from a purely professional viewpoint, clearly in the best interests of the patient. In order to justify the failure to disclose information, it must be shown that the information itself would have been physically or mentally harmful.

The California Supreme Court in the *Cobbs* case analyzed the physician's duty to disclose in somewhat different terms. As is the case in Arizona, a physician in California is required to reveal to his patient such information concerning inherent risks and alternatives as a skilled practitioner of good standing in the profession would provide under similar circumstances. However, in addition to what is required by professional standards, a physician is also under an absolute duty to make certain "minimal" disclosures. The court refused to rely on community medical standards because, in the court's view, even if such standards of disclosure exist for any prescribed treatment, they are so nebulous that physicians become, in effect, vested with virtual absolute discretion. The court stated that "[u]nlimited discretion in the physician is irreconcilable with the basic right of the patient to make the ultimate informed decision regarding the course of treatment to which he knowledgeably consents to be subjected."[6] In order to protect the patient's right to exercise control over decisions affecting his own body, and in recognition of the great disparity of knowledge which exists between patient and physician, the court imposed certain fixed obligations, together with certain qualifications and exceptions, on physicians with respect to disclosing information to their patients prior to treatment. To date, the Arizona courts have not adopted the "minimal disclosures" theory relating to risks and alternatives, the second category of disclosures. However, the physicians who practice in most Arizona communities should not expect in future litigation to have their conduct judged with reference to a standard less demanding than that which applies to California physicians. The following discussion of *Cobbs* is offered for that reason.

In *Cobbs,* the California Supreme Court announced the general rule that the decision to undergo any medical test or treatment is one which the patient alone is entitled to make. To this end, a physician is required to divulge "all information relevant to a meaningful decisional process,"[7] including any known potential peril if it is material to the patient's decision. A physician has a duty to disclose any risk of death or bodily harm which is inherent in the proposed medical procedure, and to explain in lay terms the complications which may occur. The disclosure need not be a lengthy medical discourse on all possible complications, but the patient must be apprised of the possibility of death or bodily harm if it exists.

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[5] Kronke v. Danielson, 108 Ariz. 400, 499 P.2d 156 (1972).

[6] 8 Cal. 3d at 243, 502 P.2d at 10, 104 Cal. Rptr. at 514.

[7] 8 Cal. 3d at 242, 502 P.2d at 10, 104 Cal. Rptr. at 513. This is a touchstone of the "informed consent" concept. The problem is with regard to the various judicial approaches taken in explicating the duty of the physician in the imparting of all relevant information.

In addition to the disclosure of all inherent risks, a physician must also inform his patient of all reasonable, medically recognized alternative treatments, and of the dangers inherently and potentially involved in each. For example, even though a physician may regard a radical mastectomy as the best treatment for the patient's breast cancer, he must discuss possible alternatives such as a simple mastectomy or radiation therapy. Such discussion should include a comparison of each possibility in terms of inherent risks of complications and possibilities of failure. It is up to the patient to determine in which direction she believes her interests lie. Withholding information that is pertinent to an intelligent choice is an improper method of influencing a patient's decision and prevents the patient from giving an "informed consent."

QUALIFICATIONS AND EXCEPTIONS

The *Cobbs* decision qualifies its rule of full disclosure of inherent risks and alternatives in circumstances where the disclosure of a material fact would so seriously upset the patient that he would not be able to dispassionately weigh the risks of not undergoing the treatment. However, the court indicated that if a material fact were not disclosed for this reason, the physician would have the burden of proving to the jury that his judgment was correct. This rule is perhaps the major practical difference between *Cobbs* and *Shetter*, since the Arizona decision would require the patient to prove with respect to the non-disclosure of any risk or alternative that a skilled practitioner in the community would have disclosed such fact in the best interests of his patient. The *Cobbs* opinion says that such disclosures are presumed to be required, and that a physician must convince the jury of the existence of circumstances which would justify non-disclosure.

A second important qualification announced in *Cobbs* is that there is no physician's duty to discuss the relatively remote risks inherent in "common" procedures if it is common knowledge that such risks are of very low incidence. As examples, the court indicates that the prescription of common antibiotics or the taking of a blood sample would fall into this category. Of course, the physician still has a duty to inquire into facts that would make such procedures medically unsound, such as questioning a patient about any adverse reactions to antibiotics suffered in the past. However, there is no requirement to give a warning as to the remote possibility of death or serious bodily harm in addition to making such inquiries when the physician engages in "common" medical procedures involving only remote, commonly perceived risks.

The Physician's duty to inform does not extend to matters of which the patient has indicated he does not want to be told. It is important in such cases that the patient's decision be made freely, in the absence of any intimidation on the part of the physician and in the presence of someone who can corroborate the physician's recollection should the need arise.

If the patient is a minor or an incompetent, the duty of the physician to make required disclosures runs, not to the patient, but to his legal guardian or closest available relative. The authority to give legal consent in such situations is transferred to such other person. It must be assumed that the substance of the required disclosures are no less because they are not made to the patient himself.

Both Arizona and California recognize an additional exception to the requirements of "informed consent." In emergency situations the law will imply that an "informed consent" has been given, even in the absence of any communication between the physician and patient. The definition of "emergency situation" is extremely critical in determining whether a physician has breached his duty in any given case. Essentially, emergency conditions exist if the time required to obtain the "informed consent" of the patient or a close relative would subject the patient to the risk of losing his life or health. The issue is not whether the treatment administered was prudent or beneficial, but whether the delay which would have been required to obtain the "informed consent" would have adversely affected the life or health of the patient. In such circumstances, the law will not require the physician to delay the necessary treatment.

MANNER OF DISCLOSURE

A dicussion of the substance of legally required disclosures would be incomplete without a few words about the manner of disclosure. The duty to disclose is one owing by the physician, and it necessarily follows that it can be satisfied by him alone. It would be improper to delegate this duty to a member of the physician's office staff. A patient is entitled to a professional judgment concerning the probable outcome and the risks of a proposed medical procedure, together with similar information relating to any alternative procedures. It is, therefore, absolutely essential that the physician personally supply the required information and discuss the matter with the patient in language which the patient understands.

A second point relates to problems of proof. Unless a physician takes certain routine steps to document the satisfaction of his duty, he is leaving himself wide open to legal liability. If no written evidence is kept of a conversation on which the physician intends to rely, and the patient subsequently sues on the grounds that there was no "informed consent," a jury will have to make the final decision as to whether the required disclosure occurred, based solely on how it regards the credibility of the physician and the patient. Needless to say, such a gamble is too great to be taken routinely.

There are at least two measures that can be taken by a physician which will be of immense value in proving that the required disclosures were in fact given. First, it may be practical to prepare carefully worded, written explanations of certain medical procedures which a physician frequently recommends in the course of his practice. These explanations should describe the nature of the procedure and the probable consequences, and should explain in lay terms the inherent risks and alternatives sufficient to satisfy the physician's duty of disclosure. Before giving his consent, the patient would be asked to read the prepared disclosure and then given an opportunity to discuss it with his physician. The opportunity for discussion is very important and especially so if the patient's condition differs from that of the "typical" case. It should be noted in passing that the usual standardized consent form used by hospitals is of questionable value to the physician because it, by itself, furnishes none of the specific and essential facts relating to the nature of the medical procedure and the attendant risks and alternatives.

For those cases in which a standardized form is impractical (or, perhaps, regarded by the physician as too impersonal), it becomes absolutely essential that the physician make notes of the conversation together with the patient's reaction in the patient's medical chart or record. In recognition of the practical limitations which prevent a physician from making detailed notes of the content of such conversations, he might prepare a one-page form for his own internal office use. Such a form would list various types of complications and kinds of alternative approaches to treatment which may or may not be applicable in any given case. As disclosures were actually made, the physician would indicate with brief notations on the form those areas which were discussed and those which were ignored as inapplicable to the circumstances surrounding the patient's treatment, and then insert the form in the patient's file. As an example, the Phoenix Obstetrical and Gynecological Society has recently adopted a statement of "Principles of Informed Consent" which could be utilized in this manner. Whether or not such a form is used, it is important that the notes be as specific as possible given the other demands on a physician's time. Furthermore, the legal weight accorded any such notes in any given malpractice suit will depend directly on whether the physician routinely makes notes for all of his patients and on how much time elapsed between the particular discussion at issue and the entry of the notes. The implications for a physician's office procedure are clear: these notes should be entered for all patients at the time of the actual discussion or as soon thereafter as is physically possible. If properly recorded, such notes will provide the most effective legal protection for a physician in the event of a lawsuit.

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Istanbul is a frenetic contrast to placid Bucharest. Golden domes and minarets dot the horizon. An air of intrigue permeates the city. Here is the fabled Blue Mosque of Sultan Ahmet and Sancta Sophia built by Constantine in 325 A.D. Visit the Topkapi Museum with its priceless collection of jewels, ceramics and religious relics. In the Grand Bazaar shops bulge with trinkets and treasures. Copper and brass lamps, kettles and pitchers; Bursa silks; leathers; hubbly-bubbly pipes and oriental rugs create a montage of sensual sights and sounds.

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ArMA
Medical History

PERILS OF PUBLIC HEALTH

DRY GULCH JAKE

Those of you who have toiled in the public health gardens will at once enjoy this report of Dr. L. L. Miner, City Health Officer, Bisbee, Arizona 1914.

Doctor Miner wrote wonderful letters and reports — one series concerning his duel with a smallpox epidemic is classic.

In the "Bulletin of the Arizona State Board of Health" Vol. III, January 1914, his report on "How to Keep a City Clean," is stimulating, stinging and staunch in delineating his stratagem to get a mining town to impliment simple hygienic measures. This is how he reported it:

BULLETIN OF ARIZONA BOARD OF HEALTH

How to Keep a City Clean

Dr. L. L. Miner
City Health Officer, Bisbee, Ariz.

One who has visited the Warren District may remember how the houses of Bisbee were built, during the early days of the mining camp, one above the other on the hills, without any semblance of order or regularity.

The suburbs, however, have been built in more regular order. Some are located in flat and some in hilly districts. Six townsites, close to Bisbee, have been a source of constant trouble from a health standpoint.

The sewage of a town, Jiggerville, for years led into an arroyo, which arroyo had been flushed by a constant volume of water from a mine. While far from a perfect sewage system, the town was fairly clean and sanitary as there was a small percentage of copper in the water — enough to act as a mild germicide. Without warning the arroyo became suddenly dry. It was like a Niagara Falls suddenly diverted. Mining conditions had made it necessary to change the output of the water to another channel. The arroyo was dry for but a brief period as, while lacking the accustomed flow of copper water from the mine, it soon filled with slops and sewage. The stench and filth can be readily imagined. Some citizens liked it, as it afforded an opportunity for dumping filth, unobserved, into the ditch, and to thus escape the small fee of a garbage service. The majority of citizens demanded immediate relief of the situation. Immediate relief was out of the question, as to return the water to the arroyo was impossible. The only solution was as follows:

An order was issued that each person convert his outhouse into a dry toilet and that it be made fly proof. Experiments were made with barrels placed at the outlets of drainage pipes, the pipes leading into the barrels, which were filled with rocks, sand and lime, for the purpose of filtering the water that must necessarily occupy the arroyo. The results from this were indifferent. The free use of lime about all premises was urged. Circulars were printed and placed in every house, describing the danger of the situation, outlining advice and urging precautions. A club existed known as the Lowell Improvement Club. A special meeting was advertised, and women and children were urged to come and lantern slides were exhibited, showing views taken about the town, illustrating the dangers of such conditions, which pictures were intermixed with the usual ones relative to the typhoid bearing fly. At the conclusion of the lecture, a committee was appointed, composed of six of the most prominent men of the town, who were appointed as representatives of the Board of Health with sufficient power to assist in keeping their town clean. A report was heard from but one member of this committee, and some of the other five barely escaped arrest later for carelessness and filth in connection with their own premises.

At this time there was trouble with the Southern Pacific Railroad, at Benson. The toilet at their station caused a foul and stinking cess-pool. A correspondence had been started with the Division Superintendent relative to this nuisance, and an early remedy was promised. The correspondence continued for three months, consisting of requests, orders and demands for abatement of the nuisance. Replies were prompt, courteous and promising immediate relief. I wish to quote a paragraph of a letter from the Superintendent, written three months after his original promise to immediately correct the one and only niusance under discussion. Nothing had been done by the Railroad Company, during the three months after the promise for immediate action. The last paragraph of Mr. Dwyer's letter is as follows:

"If there is any further complaint on the part of the inhabitants of Benson, would be pleased to have advice thereof. We will be glad to cooperate at any time, as I can assure you that we have considerable interest in the welfare of communities situated along our railroad."

After an interval of two more months, even with such interest and promising assurances on the part of the Railroad Company — and yet nothing done, the County Attorney was asked to help. He did. The last paragraph of his brief letter to the Superintendent is as follows:

"If this nuisance remains unabated within two weeks from date, I shall send the sheriff up there to abate it, with instruetions to arrest any individual who interferes with his actions, and a warrant will be sworn out against those who are guilty of maintaining this nuisance, including the Southern Pacific Railroad Company."

Eight days later the County Attorney wrote me as follows:

"I have the pleasure of notifying you that the nuisance at Benson has been corrected. The Railroad Company has been very prompt in complying with our demands, and I find with that Company, nothing appeals to it like brute force."

Experience has proved that but meager results have been accomplished from individuals who have needed attention by mere explanations and requests. This experience includes months of trials with slaughter houses, butcher shops, bakeries, boarding houses, restaurants and residences. A final attempt was made with a statement to them that unless conditions were improved and premises cleaned and made sanitary, arrests and closure of their places would follow. The results were nothing. The steps next taken were the arrest of several individuals, the closure of several saloons, a restaurant, a candy shop, and a limited time allowed for some other places to clean up or close. The experience of the County Attorney in dealing with the Southern Pacific coincided exactly with my experience with individuals. The results of the arrests and closures were widespread. Places were cleaned, garbage removed and conditions sanitary, — but only for a brief period of time. A repetition of the brute force principle and the idea of permanent closure of second offenders has proven the only method of dealing with those who must be forced to remain clean and sanitary.

The photographs of a slaughter house — one doing a large business — are a vivid illustration. The offal thrown within fifty feet of the building, and reeking with maggots and flies. Hogs which eat the offal, dying of disease are permitted to lie where they die, within less than a hundred feet of the slaughter house — their bodies swollen and ruptured, and covered with swarms of green flies. The slaughter house unscreened and the flies having free access from the diseased hogs to the freshly killed beef. The delivery wagon, bringing two barrels of refuse, covered with a filthy tarpaulin, which is the only one to cover the beef taken to market the following day.

Another photograph of a restaurant. A litter of dogs in the rear of the kitchen. Indescribable filth present, which a photograph could not show. This same restaurant received a written notice relative to its filthy conditions, and especially a warning against a dog kennel in connection with its kitchen. A month later this picture was taken of a litter of pups. The other picture was taken in the rear of the restaurant. A view, not possible to photograph, consisted of two large slabs of beef, within ten feet of the dog kennel, covered with a swarm of blow flies. The proprietor had been warned repeatedly in person and by letter about his place and his dog kennel had been forbidden. The following conversation showed the necessity of forcible cleanliness:

"You received a letter about dogs in the kitchen?" "Yes." "What is in the corner?" "Dogs." "What are you going to do with those two slabs of meat?" "I was intending to use them." "What is on them?" "Flies." "What kind of flies?" "Green flies."

The place now is sanitary — but not from choice.

Another phase of butcher shops and restaurants, and an important one learned by accident, is this:

Old and discarded and decaying fragments of meat are not thrown away. They are made into sausages. This is done by the use of a powder called "freezum." It kills odor and causes foul meat to appear fresh and black meat to look red. In most states the presence of this powder entails a fine of $50.00.

In many restaurants, salads are mixed in a large dish in which the spoon remains, and the green verdigris may be scraped off in a considerable mass. Few restaurants voluntarily remove contents of canned things to proper receptacles, even though it be milk, and they are kept thus for days.

Explanations and requests do no good and produce no results in such places. Fear and force have been the only means of keeping such places safe for public use.

Another phase of the disposal of filth is by those who are genuinely anxious to be sanitary, but who have maintained a nuisance overlooked by those in charge.

The Warren Ranch is a large concern, furnishing vast quantities of vegetables and milk to thousands of homes. It is irrigated by water, conveyed by a flume from the Superior mine. The flume itself cost over $10,000.00. The owners of the mine, furnishing the water, are interested in the ranch. This flume extends several miles. Along its course five outhouses had been built over the flume, thus carrying refuse to the gardens and the dairies of the ranch, and in one residence, owning an outhouse over the flume, there was a severe case of illness. The worse feature was an outhouse at the Superior mine itself, used daily by hundreds of men, which made the flume a veritable sewer. A notice from the Health Board to the Company resulted in the destruction of the outhouses within a few hours. They had been present for some time, and through custom, had been overlooked.

The battle of Naco left its problems. Half of Naco is on the American side of the line and half in Mexico. The exact number killed during the fight will never be known as many were buried early during the fight in the Mexican part of the town. More than twenty were killed by a machine gun in an arroyo just outside of the town and three were executed at the same site after the battle, and the bodies thrown into the arroyo. This arroyo leads into the watershed of the Bisbee-Naco Water Company, which furnishes water for the entire district, i.e. – Bisbee, Warren, Lowell and other towns. The bodies were unburied. Some of those killed came from districts in Mexico where typhus fever exists. The condition promised to infect the water supply of the entire Warren District of over twenty thousand inhabitants. A visit to Colonel Brachamonte, in charge of the state troops, resulted in a promise to dispose of the bodies by burning them. The colonel left the following day, and nothing was done. Colonel Callies, next in charge, was interviewed, who promised to cremate the bodies, but the promise failed. The Board of Directors of the water company were then informed of the situation. They promised to do everything in their power and stand every expense that might be incurred. The situation approached acute danger to thousands of families, and the State Superintendent of Health was nearly asked to take charge. Major Reed, in charge of the U. S. troops was consulted. He stated that while he was ordered from Washington to keep his troops upon this side of the line in case of a crisis, he considered this a crisis more serious than bullets, and he offered the use of every member of the regiment to cross the line to clean up conditions and make American residents safe from a possible epidemic. With such a possibility as a last recourse, every effort was put forth to avoid this necessity. It was easily arranged with the Mexican officials that American citizens take charge of the cremation of the bodies of men, and many horses and cattle that had been killed. Yaqui soldiers were placed under American orders. Stretchers were made of doors, the bodies covered with lime, which made it possible to handle them. Iron bars were placed through the base of a small adobe house, a fire started beneath, and with the use of wood and kerosene each body was consumed in about thirty minutes time. The results of burning the many bodies were a few bones, which crumbled upon a slight touch. The watershed was cleared of all debris within forty-eight hours.

Warren is a beautiful residence site located three miles from Bisbee. It is unincorporated and under county control, but needs little observation because of its perfect sewerage system and its cleanliness. It has needed protection iteslf from the city of Bisbee, because of the outlet of the sewer of Bisbee emptying within fifteen hundred feet of Warren, and the garbage site of Bisbee within an equal distance. The city was asked by the County Board of Health to change its garbage site. The City Council was seen repeatedly, and nothing gained but promises. The County Superintendent of Health was compelled to select a garbage site, condemn the old one, and order it destroyed. The city was repeatedly asked to prolong the sewer. Nothing was gained but promises. After a lapse of months, the city was told that the County would build the sewer and collect all expenses from the city. Only force brought even the city to action.

It has been the purpose or the custom to institute legal proceedings only where absolutely necessary and essential for protection of public health. It has been the desire and the aim to protect public health and business and the general welfare of the community and to request the aid of every individual along such lines, explaining by pictures, by the press and through circulars the reasons for precautions and thereby create a wholesome public sentiment in behalf of proper sanitary environment.

Experience has proved, however, that force through fear of publicity, arrest or expense, has been the only means of obtaining results. A request, often repeated, has always preceded the use of the big stick, but the use of the big stick has been the only cause of any action or results. A peculiar phase of this final method, and a surprising one, is that the majority of those who have been necessarily arrested, have later shown signs of warm friendship. Not one engaged a lawyer for a defense – all have plead guilty and all were fined, and some have called me professionally to treat them or their families. Brute force, properly used, has never failed, in my brief experience, to be the best method for results and it has brought respect and even friendship of those upon whom it was necessarily used.

Letters to Editor

ARIZONA LEGISLATURE — PHYSICIAN PROGRAM

March 21, 1975

Dear Editor:

I was sitting in my office trying to figure out my monthly call roster for the Emergency Room, and was shortly interrupted by a phone call from Mr. Gary Barnett of the Arizona Medical Association.

"How would you like to spend the day as the House Physician for the Arizona State Legislature?" Gary went on to explain that each day a physician volunteer would spend a day at the State Capitol looking after a new infirmary for personnel and state officials. Caught off guard, I immediately tried to think of a convincing excuse not to give up any of my precious days off.

"Why would the State Legislature need an Emergency Physician for an entire day?" I asked myself. I could not think of a good excuse not to volunteer so I answered saying that the only time I would have would be on the 24th. I held my breath, hoping that day was covered and breathed a sigh of resignation when he said, "The 24th it is! I'll get back to you later," and hung up. Shortly thereafter instructions arrived informing me where to park (including a detailed map of the State Capitol complex) and requesting that I bring along a medical bag and instruments.

I soon found myself digging through the closet for my old physical diagnosis bag. After removing some screw drivers, a pair of pliers and a wrench I recovered a blood pressure cuff and an old melted plastic stethoscope that I had not seen for many years. For drug therapy I found a pharmaceutical kit containing a few pre-loaded syringes of Vitamin B_{12} and adrenaline. The adrenaline, I thought, might be of use, so I tossed the box into the bag with the other instruments and headed downtown.

I arrived at the State Capitol and was met by Gary, who introduced me to the Chief of Security. I was given a pocket identification badge, identifying me as House Physician, and a "beeper" connected to the switchboard. I then took a tour of the House and the Senate buildings. Security was tight with guards at all public entrances. I was introduced to everyone and soon felt like a VIP with full clearance to an Air Force missile site facility.

While on our tour I was brought into a committee meeting room in which Dr. James Schamadan, our State Director, was making a plea for additional funds for his department. I stood amazed to watch Jim duel with the legislators and dumbfounded at his ability to carefully draw on reams of data to back up his proposals. But what amazed me more was his ability to remember to say, "Mr. Chairman" or "Mr. So-and-So" each time he opened his mouth.

After the meeting Jim told me that I had picked a good day since there was an important Appropriations Committee meeting on emergency medical facilities to be held later on in the afternoon. He suggested I attend and I quickly accepted. After sitting in on the concluding business of the House of Representatives I dropped by the office of Dr. Dick Flynn. It was Dick's idea that physicians donate a day at the State Capitol. Dick was sitting in his office — his desk piled high with file folders. As we talked we were interrupted no less than three times by Legislators and other employees, questioning Dick about health matters (personal health matters). During our conversation Dick informed me that the last year there were over 150 bills introduced involving medical legislation. I was even further amazed to learn of the number of bills that were being handled on this very day. The conversation swung to malpractice and Dick showed me a packet of information he had just received from the AMA and I was glad that we had the medical profession represented at this level for any help that they could give us in future legislation for the curtailment of excessive malpractice insurance rates. We were interrupted by another legislator who ran into Dick's office saying, "I have some representatives from the ambulance companies here who are very upset about the new paramedic bill. Can you please come and talk with them?"

As the Arizona President of the Emergency Physicians I was tempted to follow Dick but left as they gathered in a meeting next door.

I found my day at the State Capitol one of the most fascinating that I have had since arriving in Arizona. It was one of the first times that I felt I belonged to Arizona and was not just another visitor. During the day I found out who my new representatives were – having just moved into a new district. I had an opportunity to meet these people personally and to see them in action on the floor. I had an opportunity to watch Jim Schamadan and Dr. Suzanne Dandoy as they pushed for legislation in which I was interested. I found the people who represent us at the state level were warm and receptive and interested in medical affairs. Agreed, I did little emergency medicine that day. I treated a mild case of gastroenteritis which had failed to respond to Jim Schamadan's earlier therapy; a simple conjunctivitis for which I wrote a prescription on a piece of scrap paper; and took the blood pressure of several other people – one a hypertensive.

Obviously, having a physician at the State Capitol each day while the Legislature is in session is not a medical necessity. However, it gives a unique opportunity to meet those who represent us and develop an interest in the medically related issues which are so much a part of each session.

I hope other fellow physicians will also take this opportunity. I certainly hope I am asked back.

Sincerely,
Sidney A. Blubaugh, M.D.
President, Arizona Chapter
The American College of
Emergency Physicians

March 6, 1975

Dear Editor:

I participated in the House Physician Program for the Arizona State Legislature on March 5, 1975. First, I would like to thank you Gary Barnett for the many courtesies and considerations involved in my experience. Further, it is my impression that this program, initiated by Dr. Dick Flynn, is an extremely worth-while opportunity for the practicing physician to individually meet with legislators and convey personal opinions regarding health matters in this state. I would highly recommend that other state physicians participate in this program.

Again, many thanks.

Sincerely yours,
J. B. McNally, M.D.

ERRATA

CURRENT SURGICAL MANAGEMENT OF OPERABLE BREAST CANCER, Gabriel de Freitas, M.D. Page 317. Illustrations 3 and 6 were reversed. The legends are in the proper place. Our apologies to Dr. de Freitas.

RESPIRATORY DISORDERS IN TUCSON: PRELIMINARY OBSERVATIONS, Page 329, the authors were listed incorrectly and should read: James O. Morse, M.D.; Michael D. Lebowitz, M.D.; Donald J. Knudson, M.D.; Robert Barbee, M.D.; Benjamin Burrows, M.D. Our apologies to these gentlemen.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

AD HOC COMMITTEE ON DATA COLLECTION AND ANALYSIS

The meeting of the Ad Hoc Committee on Data Collection and Analysis of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Thursday, April 3, 1975, convened at 7:52 p.m., William J. Moore, M.D., Chairman, presiding.

BACKGROUND

The Chairman related the history of the group and how it developed into its present Committee structure. Dr. Moore introduced George B. Rowland, M.D., who has agreed to function as Vice Chairman of the Committee.

PROGRESS REPORTS

Extensive discussion ensued on the current status of "Abortion Reporting", "Birth/Death Certificate Matching" and the Health Information Center.

Mr. John Boyd, new Director of the Management Information Systems of the Department of Health Services, commented that the abortion reporting system is ready, but due to pressure of other activities has not been implemented. He stated that the Department is undergoing reorganization which he discussed in some detail.

Emphasis was placed on the need to get the Birth/Death Certificate Matching program underway soon.

MEMBERSHIP BASE

Dr. Moore appointed Dr. Rowland to chair a subcommittee with Dr. Humphrey and Mr. Carlile to make recommendations on how best to broaden the base of this Committee.

STATEMENT ON "CONFIDENTIALITY"

The need for the Association to have a statement on confidentiality was discussed.

It was moved and carried to ask Dr. Alan Humphrey to draft such a statement for the committee's consideration at its next meeting.

MATERNAL MORTALITY COMMITTEE

Discussion ensued on the current status of the subject Committee and its problem in obtaining copies of the death certificates on a timely basis. It was determined that Dr. Moore would draft a letter in an attempt to expedite the process.

Meeting adjourned 10:12 p.m.

William E. Crisp, M.D.
Secretary

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held at 810 W. Bethany Home Road, Phoenix, Arizona on Saturday, March 22, 1975, a quorum being present convened at 3:07 p.m., William G. Payne, M.D., Chairman and Presdent, presiding.

MINUTES

The minutes of the meeting held February 21, 1975 were approved as distributed.

BOMEX LEGISLATION

Mr. Barnett explained the dilemma he is facing with H.B. 2302 in the Public Health Committee of the House of Representatives and the efforts to remove all relationship of the association to the appointive process of members to the BOMEX.

It was determined that should the House committee vote to remove the Association's present status in the bill that we should attempt to kill the bill.

P.L. 93-641 — HEALTH SERVICE AREA DESIGNATIONS

Mr. Robinson reported that a majority of the Board had voted against designating only one Health Service Area for the state. That, of those who voted against one area, a large majority voted in favor of having two Health Service Areas. Mr. Robinson was directed to advise the Governor of our position.

The Committee also received for information proposals on Health Service Areas from Pima Health Systems, Arizona Hospital Association, Pima County Health Planning Council and the Maricopa County Medical Society.

U. R. REGULATIONS

Dr. Payne reported that several hospital medical staffs had taken the position that they would not participate in the newly promulgated U. R. Regulations or in other P.S.R.O. activities. He also noted that Resolution 9-75 has just been received from the Yavapai County Medeal Society along the same lines and will be the basis for establishing the Association's position when it is debated during the forthcoming House of Delegates meeting.

PROFESSIONAL LIABILITY REVIEW COMMITTEE

Mr. Robinson reported that nominations for appointments to the subject committee have started to come in. That the committee should be completed within 30 days.

Application Review

The Committee reviewed numerous applications and made certain determinations regarding various incidents.

Ad Hoc Bicentennial Committee

OTHER BUSINESS

Florence B. Yount's letter of March 13th was reviewed and received for information.

Salaries

It was moved and carried to implement the action taken by the Board of Directors at their meeting on November 24, 1974 as it relates to salaries of the Executive Director and the Associate Executive Director.

Meeting adjourned 6:26 p.m.

William E. Crip, M.D.
Secretary

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

THE FOLLOWING INSTITUTIONS HAVE RECEIVED ArMA ACCREDITATION FOR CONTINUING MEDICAL EDUCATION.

GOOD SAMARITAN HOSPITAL, PHOENIX
MARICOPA COUNTY GENERAL HOSPITAL, PHOENIX
ST. LUKE'S HOSPITAL AND MEDICAL CENTER, PHOENIX
ST. JOSEPH'S HOSPITAL AND MEDICAL CENTER, PHOENIX
TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
VETERANS ADMINISTRATION CENTER, PRESCOTT

CONTINUING MEDICAL EDUCATION ACTIVITIES SPONSORED BY THESE INSTITUTIONS RECEIVE CATEGORY 1 CREDIT FOR THE ArMA CERTIFICATE IN CONTINUING MEDICAL EDUCATION AND THE AMA PHYSICIAN'S RECOGNITION AWARD.

TENTH ANNUAL MEETING ROCKY MOUNTAIN NEUROSURGICAL SOCIETY

June 8-11, 1975
Cozumel Island, Yucatan Peninsula, Mexico

June 12-13, 1975
Post Convention Seminars, Pan-American Hotel
Merida, Yucatan Peninsula, Mexico

SPONSOR: Rocky Mountain Neurosurgical Society

CONTACT: Richard H. Moiel, M.D., Secretary
Rocky Mountain Neurosurgical Society
601 Medical Towers, 1709 Dryden St.
Houston, Texas 77025

GLENDALE SAMARITAN HOSPITAL

8 A.M. Second Tuesday Each Month
Conference room

June 10 — Dizziness

July 8 — Ominous Hematuria

Sept. 9 — Renal Failure — Indications for Dialysis

Oct. 14 — Current Treatment of Congestive Heart Failure

Nov. 11 — Evaluation of the Patient with Peripheral Vascular Disease

Dec. 9 — Current Concepts in Anesthesia

SPONSOR: Glendale Samaritan Hospital

CONTACT:
Antonio Toraya, M.D., FACS
450 N. 51st Ave.
Phoenix, AZ

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

COCONINO COUNTY MEDICAL SOCIETY SUMMER MEDICAL SEMINAR

July 26-27, 1975

SPONSOR: Coconino County Medical Society

CONTACT:
Merrill M. Abeshaus, M.D.
1355 N. Beaver St.
Flagstaff, AZ 86001

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

RUIDOSO SUMMER CLINIC

Inn of the Mountain Gods
Ruidoso, New Mexico
July 14-17, 1975

SPONSOR: University of New Mexico School of Medicine

CONTACT:
Bob Reid, Conv. Dir.
610 Electric Bldg.
El Paso, Texas 79901

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

PHYSICIANS TRAINING PROGRAM AS PART OF ARTHRITIS SERVICES PROGRAM

July 1, 1974 - June 30, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: Arizona Medical Center and Arthritis Services Program

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

DEPRESSION A PRACTICAL APPROACH

September 18, 1975
Little American Motel, Flagstaff, AZ

SPONSOR: Coconino County Medical Society

CONTACT:
Joseph N. Reno, M.D.
120 West Fine Ave.
Flagstaff, AZ

Approved for 4 required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ., Rm. 8403

SPONSOR: Department of Psychiatry, U of A College of Medicine

CONTACT: Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ hours per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS MEDICAL & SURGICAL

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Departments of Medicine, Family Practice, and Surgery

CONTACT: Jack D. Nestor, M.D.
Clinical Laboratory
1601 W. St. Mary's Rd.
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

REVIEW COURSE IN INTERNAL MEDICINE

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

Weekly on Wednesdays, 5 p.m.-6:30 p.m.
at participating Hospitals listed below
February 5 - June 4, 1975

SPONSOR: Departments of Medicine, Good Samaritan Hospital, Maricopa County General Hospital and St. Joseph's Hospital

CONTACT: D. J. Crosby, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

PHOENIX PSYCHIATRIC COUNCIL CONTINUING EDUCATION PROGRAM

September 1974 — May 1975

SPONSOR: Phoenix Psychiatric Council

CONTACT:
Robert H. Barnes, M.D.
525 N. 18th St.
Phoenix, AZ 85006

Approved for required hours per session toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St. Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

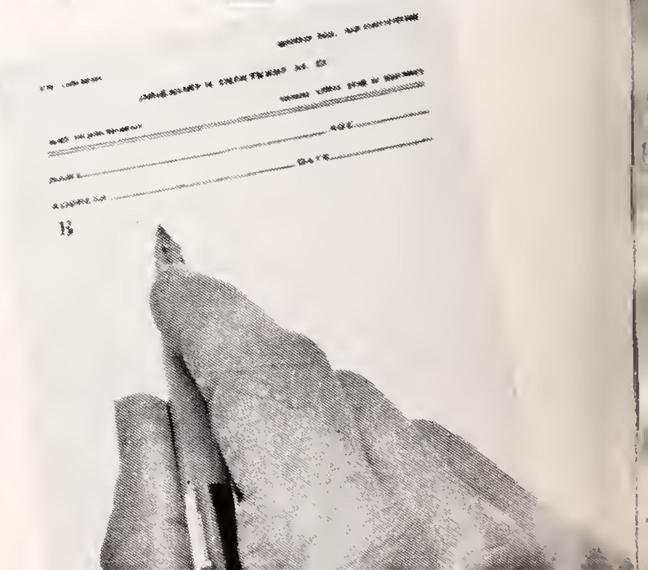
3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Bioequivalence



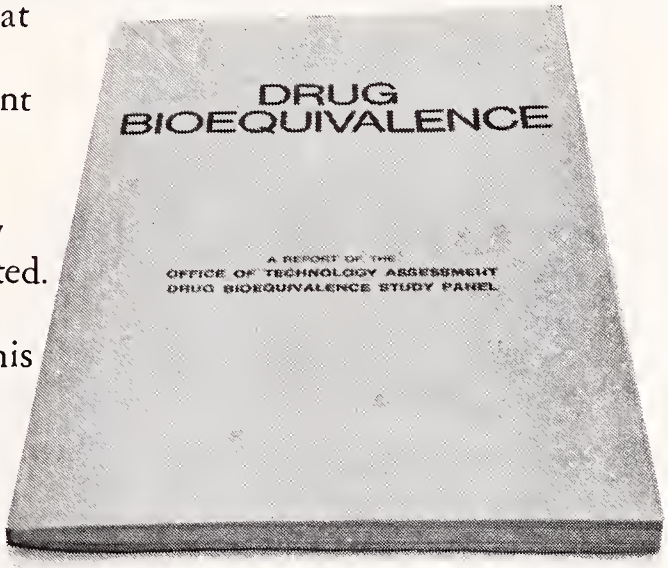
he weight of scientific opinion:

If the pharmacist substituted a
mically equivalent drug for the
you have specified for your
ient—could you be certain of that
duct's safety and effectiveness
ply because the chemical content
s the same?

Definitely not, unless bio-
ivalence tests and other quality
rance checks had been conducted.
e pharmaceutical industry and
ny scientists have maintained this
ition for years, but others have
stioned it. Now the Office of
hnology Assessment of the
ngress of the United States has
orted on the issue in its Drug
equivalence Study.*

Here are a few definitive state-
ıts in the O.T.A. report:

"...the problem of bioinequiva-
cy in chemically equivalent prod-
is a real one. Since the studies in
ch lack of bioequivalence was
nonstrated involved marketed
ducts that met current compen-
standards, these documented in-
ıces constitute unequivocal
lence that neither the present
ıdards for testing the finished
duct nor the specifications for
erials, manufacturing process,
controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.


DRUG
BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:

(a) chemical equivalence; and (b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or (c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

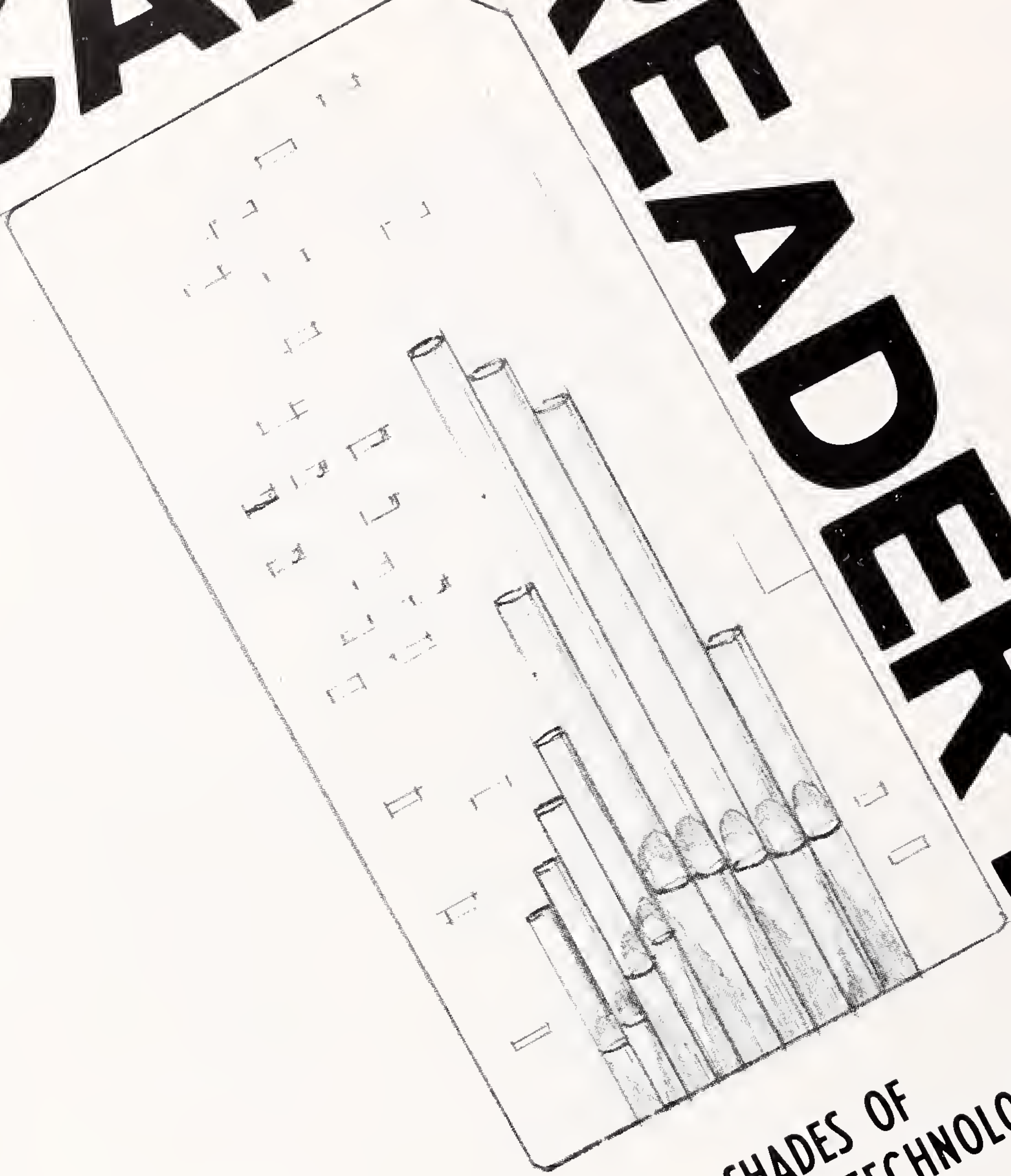
The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of your prescription...

P·M·A
Pharmaceutical Manufacturers
Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

rotecting the ntegrity of our prescription

CARD READER?



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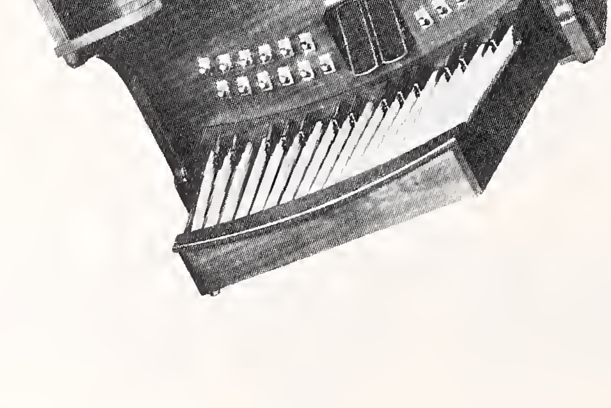
MODERN DAY TECHNOLOGY!

Not only do the "fixed voices" contained in the Allen Digital Computer sound like pipes, so do the cards you insert.

If you believe in computers, then you can believe the Allen Digital Computer Organ is "light years ahead" of any organ today! Come in soon and see how you can program pipe sounds of your choice into this magnificent Allen Organ.



Allen
PIANO & ORGAN CO.

3409 WEST BETHANY HOME ROAD
1632 EAST CAMELBACK ROAD

HBA LIFE *Commends*

LARRY FRENCH JR.

AGENT and MANAGER of the YEAR!

HBA Life takes this opportunity to publicly congratulate Mr. Larry French, Jr. for professional accomplishment. For the year 1974, Larry, as an individual underwriter and as an agency manager, led our entire field organization in bringing the savings-protection benefits of our products to almost 200 families and businesses in greater Phoenix. In all, over $2,000,000 of future income to these families and businesses was placed by this outstanding young man.

Larry French, Jr. personifies today's life and health insurance agent. He is just one of the many reasons why people have found that HBA is a good company to do business with.

For assistance with your financial program, get in touch with Larry French soon. Larry's office is at 1337 North First Street. The telephone number is 258-4885.

THE HBA LIFE INSURANCE COMPANY

1337 N. FIRST ST. (P.O. BOX 1272), PHOENIX, AZ 85001 (602) 258-4885

Serving the West since 1944

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An Outpatient Pulmonary Function Laboratory Facility
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- SPIROMETRY (before and after bronchodilator therapy)
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- ARTERIAL BLOOD GASES (at rest and treadmill exercise)

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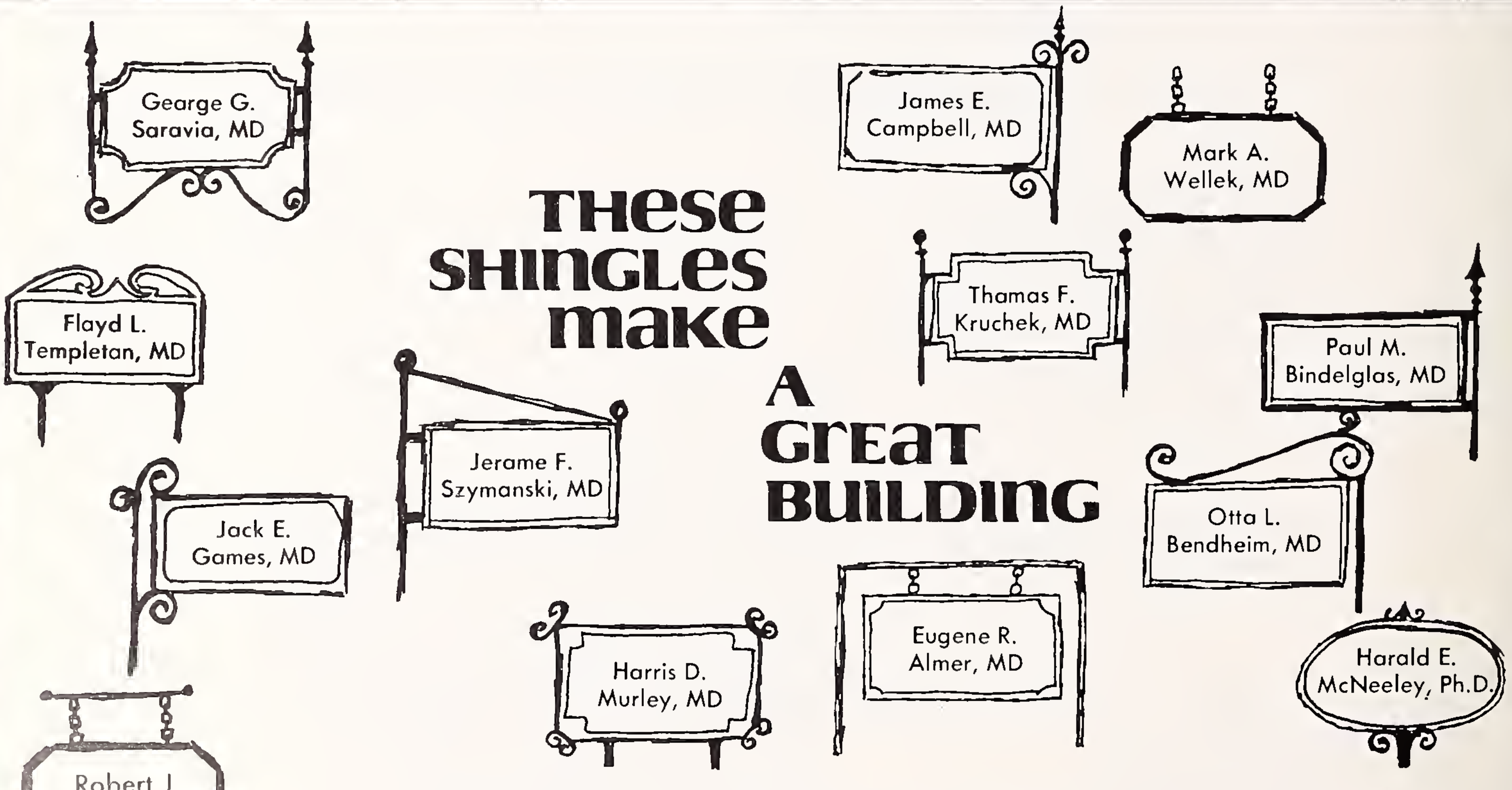

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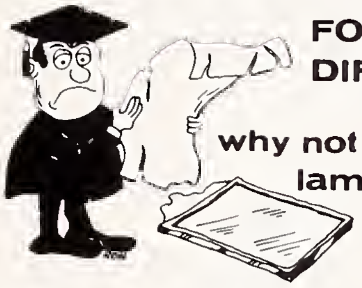

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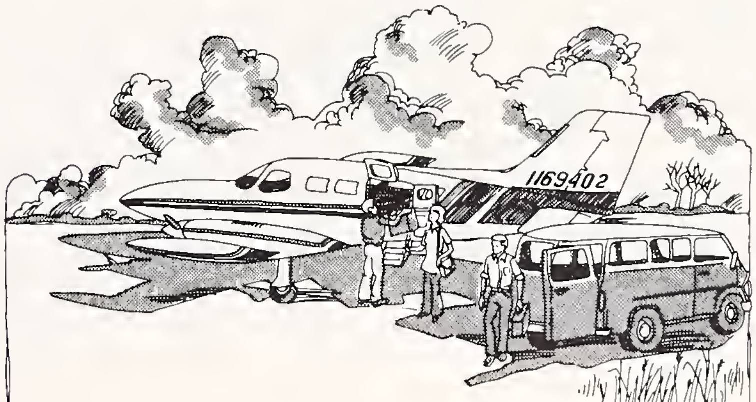

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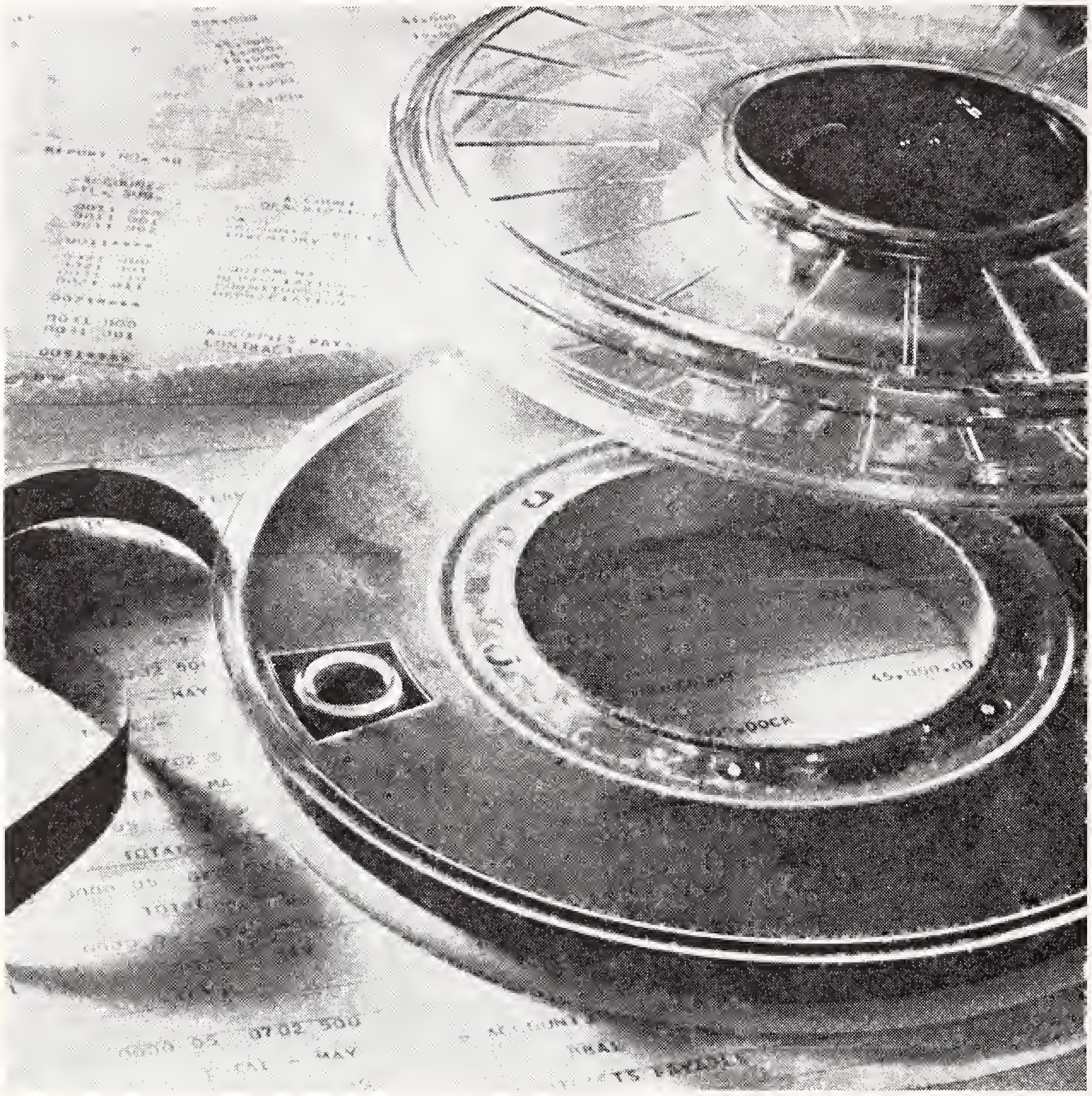

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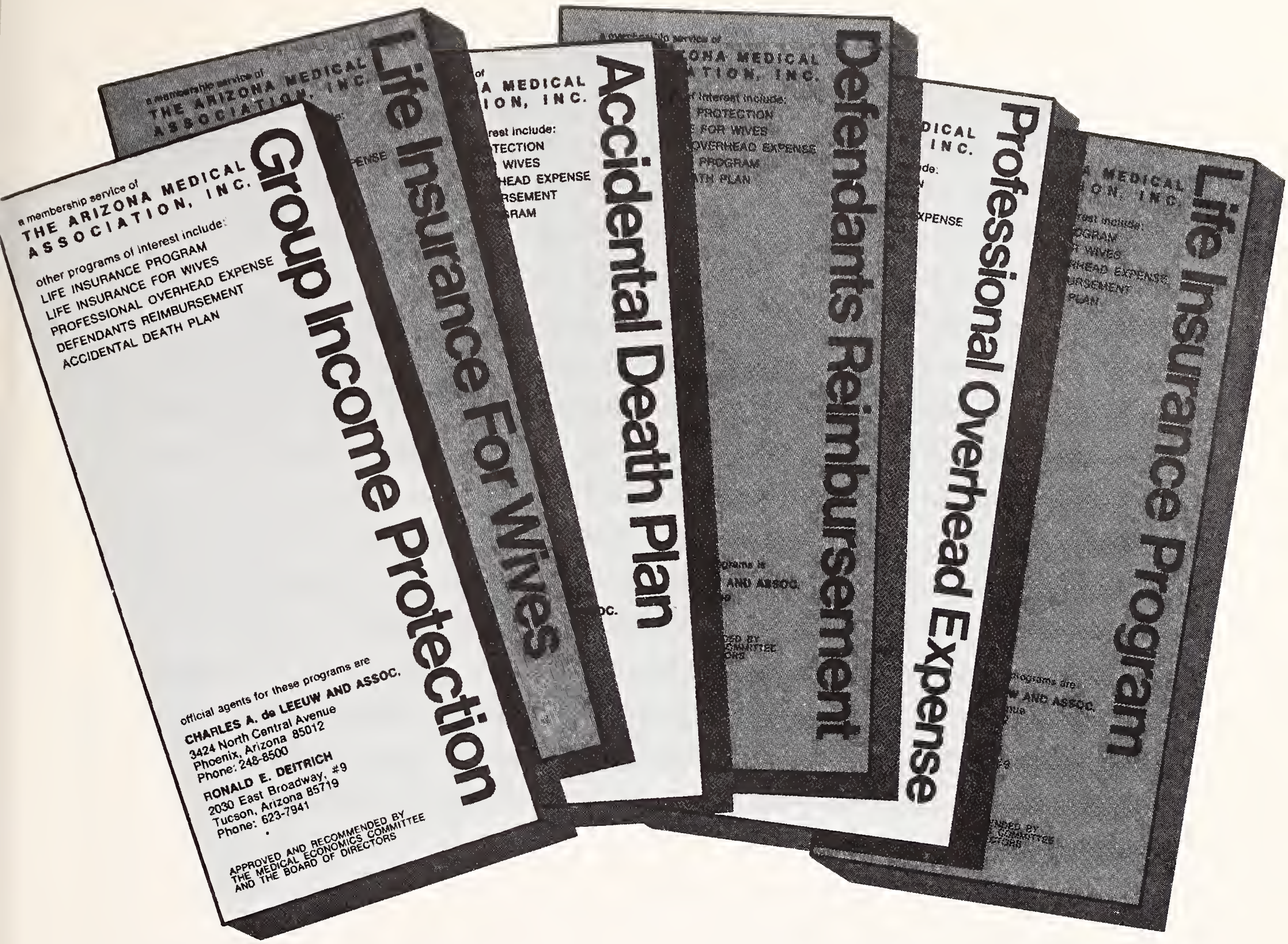

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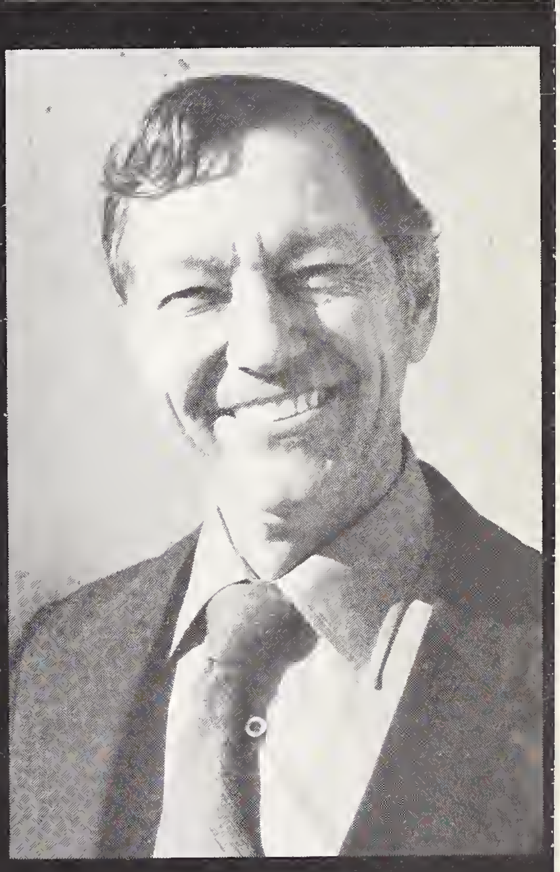

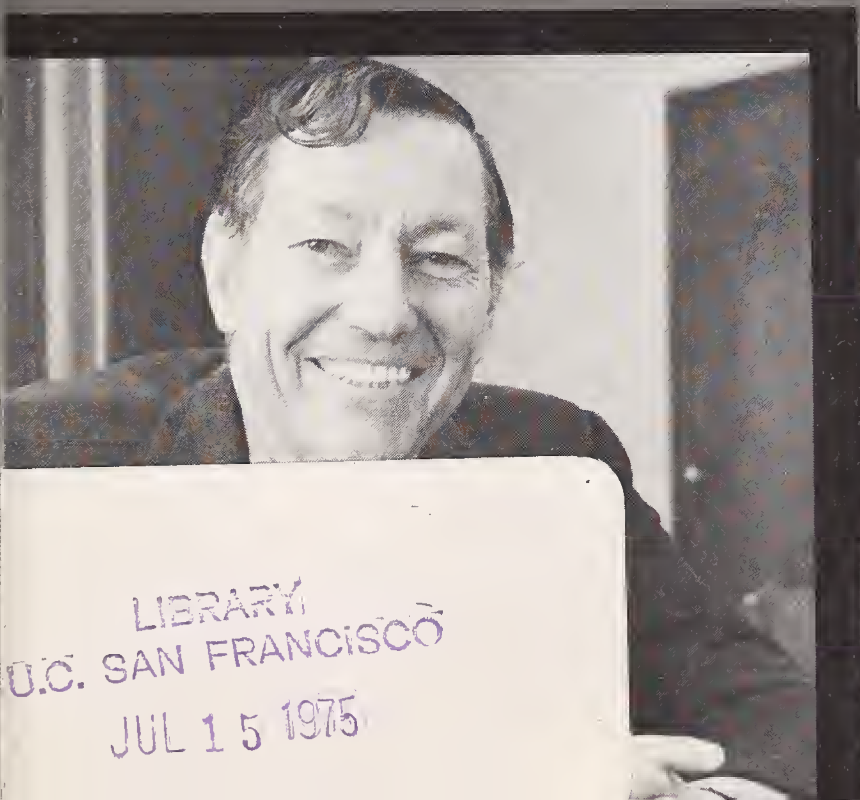

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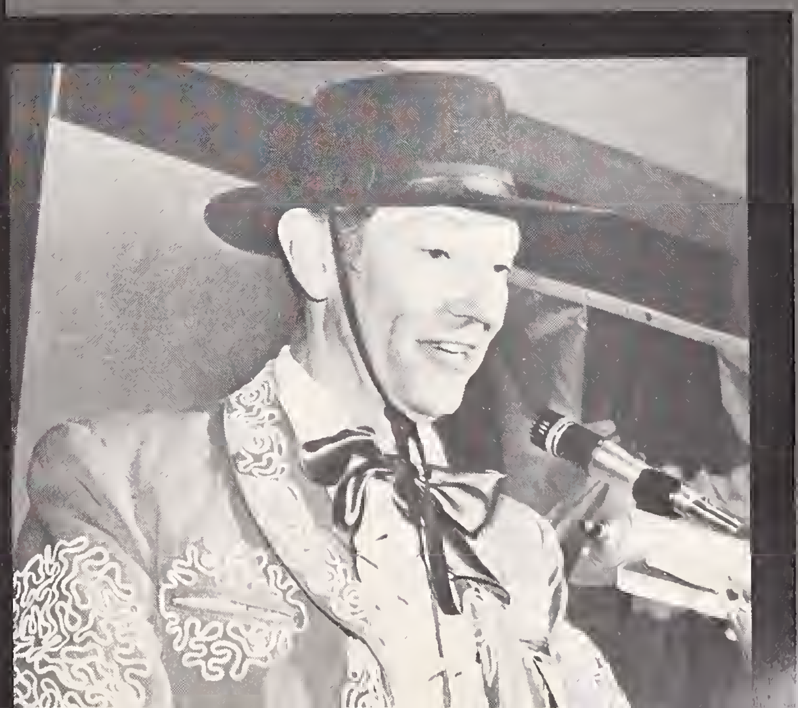

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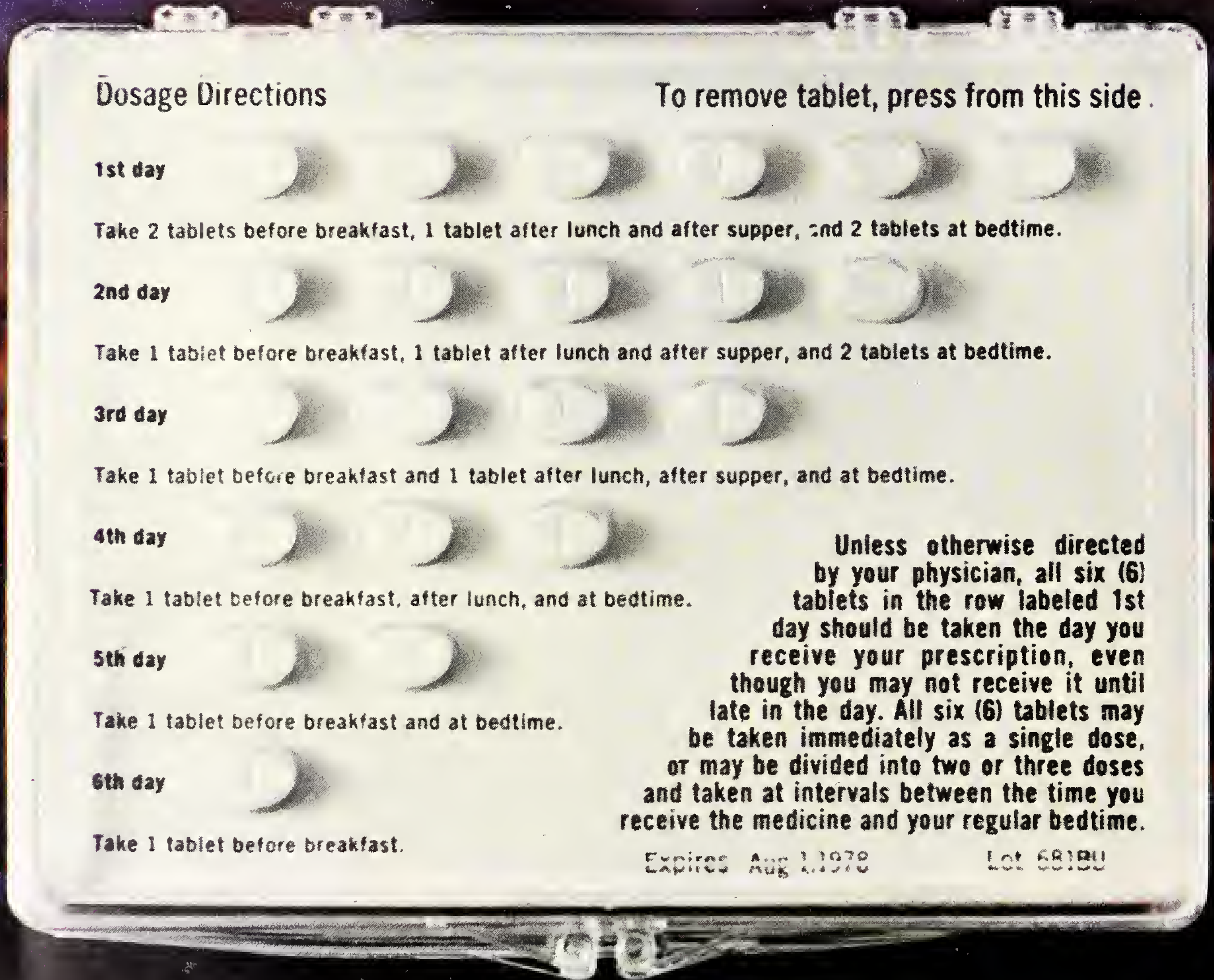

Dosage Directions

To remove tablet, press from this side.

1st day

Take 2 tablets before breakfast, 1 tablet after lunch and after supper, and 2 tablets at bedtime.

2nd day

Take 1 tablet before breakfast, 1 tablet after lunch and after supper, and 2 tablets at bedtime.

3rd day

Take 1 tablet before breakfast and 1 tablet after lunch, after supper, and at bedtime.

4th day

Take 1 tablet before breakfast, after lunch, and at bedtime.

5th day

Take 1 tablet before breakfast and at bedtime.

6th day

Take 1 tablet before breakfast.

Unless otherwise directed by your physician, all six (6) tablets in the row labeled 1st day should be taken the day you receive your prescription, even though you may not receive it until late in the day. All six (6) tablets may be taken immediately as a single dose, or may be divided into two or three doses and taken at intervals between the time you receive the medicine and your regular bedtime.

Expires Aug 1,1978 Lot 681BU

The explicit printed dosage instructions that accompany each Dosepak make it easy for the patient to understand and follow the dosage regimen.

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On occasion, a six-day course of Medrol therapy may not be sufficient and therapy may need o be extended. If there is continued contact with the sensitizing agent, corticosteroids will not completely suppress the inflammatory response. A further caution: If lesions become nfected during Medrol therapy, it should be remembered that steroids may decrease resistance to infection and hinder the body's ability to localize an infection.

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DESCRIPTION AND ACTIONS: Medrol (methylprednisolone) is a synthetic glucocor- coid with potent anti-inflammatory effects. It is readily absorbed from the GI tract. lucocorticoids cause profound and varied metabolic effects and modify the body's im- une responses to diverse stimuli.

NDICATIONS: 1. **Endocrine Disorders:** Primary or secondary adrenocortical insuf- ciency (hydrocortisone or cortisone is the first choice; synthetic analogs may be used conjunction with mineralocorticoids where applicable; in infancy, mineralocorticoid upplementation is of particular importance). Congenital adrenal hyperplasia; nonsup- urative thyroiditis; hypercalcemia associated with cancer. 2. **Rheumatic Disorders:** As djunctive therapy for short-term administration (to tide the patient over an acute epi- ode or exacerbation) in: psoriatic arthritis; rheumatoid arthritis (selected cases may equire low-dose maintenance therapy); ankylosing spondylitis; acute and subacute ursitis; acute nonspecific tenosynovitis; acute gouty arthritis. 3. **Collagen Diseases:** uring an exacerbation or as maintenance therapy in selected cases of—Systemic upus erythematosus; acute rheumatic carditis. 4. **Dermatologic Diseases:** emphigus; bullous dermatitis herpetiformis; severe erythema multiforme (Stevens- ohnson syndrome); exfoliative dermatitis; mycosis fungoides; severe psoriasis. 5. **llergic States:** Control of severe or incapacitating allergic conditions intractable to dequate trials of conventional treatment: Seasonal or perennial allergic rhinitis; bron- hial asthma; contact dermatitis; atopic dermatitis; serum sickness. 6. **Ophthalmic iseases:** Severe acute and chronic allergic and inflammatory processes involving the ye and its adnexa such as—allergic corneal marginal ulcers; herpes zoster ophthal- icus; anterior segment inflammation; diffuse posterior uveitis and choroiditis; sympa- etic ophthalmia; allergic conjunctivitis; keratitis; chorioretinitis; optic neuritis; iritis nd iridocyclitis. 7. **Respiratory Diseases:** Symptomatic sarcoidosis; Loeffler's syn- rome not manageable by other means; berylliosis; fulminating or disseminated pulmo- ary tuberculosis when concurrently accompanied by appropriate antituberculous hemotherapy. 8. **Hematologic Disorders:** Idiopathic and secondary thrombocytopenia adults; acquired (autoimmune) hemolytic anemia; erythroblastopenia (RBC anemia); ongenital (erythroid) hyperplastic anemia. 9. **Neoplastic Diseases:** For palliative man- gement of: leukemias and lymphomas in adults; acute leukemia of childhood. 10. **dematous States:** To induce a diuresis or remission of proteinuria in the nephrotic yndrome, without uremia, of the idiopathic type or that due to lupus erythematosus. 1. **Miscellaneous:** Tuberculous meningitis with subarachnoid block or impending lock when concurrently accompanied by appropriate antituberculous chemotherapy. ystemic dermatomyositis (polymyositis).

ONTRAINOICATIONS: Systemic fungal infections.

ARNINGS: In patients on corticosteroid therapy subjected to unusual stress, in- eased dosage of rapidly acting corticosteroids before, during, and after the stressful tuation is indicated.

Corticosteroids may mask some signs of infection and new infections may appear uring their use. There may also be decreased resistance and inability to localize infec- on. Prolonged use may enhance the establishment of secondary ocular infections due fungi or viruses.

Since adequate human reproductive studies have not been done, the use in preg- ancy, nursing mothers or women of childbearing potential requires that the possible enefits be weighed against the potential hazards to the mother and the embryo or tus. Infants should be observed for signs of hypoadrenalism.

Average and large doses of hydrocortisone or cortisone can cause elevation of blood essure, salt and water retention, and increased excretion of potassium. These effects e less likely to occur with the synthetic derivatives except when used in large doses. ietary salt restriction and potassium supplementation may be necessary. All corticos- roids increase calcium excretion.

While on corticosteroid therapy, patients should not be vaccinated against small- ox. Other immunization procedures should not be undertaken in patients who are corticosteroids, especially on high dose, because of possible hazards of neuro- gical complications and a lack of antibody response.

The use of corticosteroids in active tuberculosis should be restricted to those cases fulminating or disseminated tuberculosis in which the corticosteroid is used for the anagement of the disease in conjunction with an appropriate antituberculous regi- en.

If corticosteroids are indicated in patients with latent tuberculosis or tuberculin reactivity, close observation is necessary as reactivation of the disease may occur. During prolonged corticosteroid therapy, these patients should receive chemoprophylaxis.

PRECAUTIONS: Hormone therapy is an adjunct to, and not a replacement for, conventional therapy.

Dosage should be individualized according to the severity of the disease and the response of the patient. As soon as a satisfactory clinical response is obtained, the daily dose should be reduced, either to termination of treatment or to the minimal effective maintenance dose level. The lowest possible dose should be used and when reduction in dosage is possible, the reduction should be gradual if the drug has been administered for more than a few days. If a period of spontaneous remission occurs in a chronic condition, treatment should be discontinued.

Drug-induced secondary adrenocortical insufficiency may be minimized by gradual reduction of dosage. This type of relative insufficiency may persist for months after discontinuation of therapy; therefore, in any situation of stress occurring during that period, hormone therapy should be reinstituted. Since mineralocorticoid secretion may be impaired, salt and/or a mineralocorticoid should be administered concurrently.

There is an enhanced effect of corticosteroids on patients with hypothyroidism and in those with cirrhosis.

Corticosteroids should be used cautiously in patients with ocular herpes simplex because of possible corneal perforation.

Psychic derangements may appear or existing emotional instability or psychotic tendencies may be aggravated by corticosteroids.

Aspirin should be used cautiously in conjunction with corticosteroids in hypoprothrombinemia..

Steroids should be used with caution in nonspecific ulcerative colitis, if there is a probability of impending perforation, abscess or other pyogenic infection; diverticulitis; fresh intestinal anastomoses; active or latent peptic ulcer; renal insufficiency; hypertension; osteoporosis; and myasthenia gravis.

Growth and development of infants and children on prolonged corticosteroid therapy should be carefully observed.

Blood pressure, body weight, routine laboratory studies, including 2-hour postprandial blood glucose and serum potassium, and a chest X-ray should be obtained at regular intervals during prolonged therapy. Upper GI X-rays are desirable in patients with known or suspected peptic ulcer disease.

ADVERSE REACTIONS: Fluid and Electrolyte Disturbances. Sodium retention; fluid retention; congestive heart failure in susceptible patients; potassium loss; hypokalemic alkalosis; hypertension. **Musculoskeletal.** Muscle weakness; steroid myopathy; loss of muscle mass; osteoporosis; vertebral compression fractures; aseptic necrosis of femoral and humeral heads; pathologic fracture of long bones. **Gastrointestinal.** Peptic ulcer with possible perforation and hemorrhage; pancreatitis; abdominal distention; ulcerative esophagitis. **Dermatologic.** Impaired wound healing; thin fragile skin; petechiae and ecchymoses; facial erythema; increased sweating. May suppress reactions to skin tests. **Neurological.** Increased intracranial pressure with papilledema (pseudotumor cerebri) usually after treatment. Convulsions; vertigo; headache. **Endocrine.** Development of Cushingoid state; suppression of growth in children; secondary adrenocortical and pituitary unresponsiveness, particularly in times of stress, as in trauma, surgery or illness; menstrual irregularities; decreased carbohydrate tolerance; manifestations of latent diabetes mellitus; increased requirements for insulin or oral hypoglycemic agents in diabetics. **Ophthalmic.** Posterior subcapsular cataracts; increased intraocular pressure; glaucoma; exophthalmos. **Metabolic.** Negative nitrogen balance due to protein catabolism.

OOSAGE AND ADMINISTRATION: The initial dosage may vary from 4 to 48 mg per day. **Requirements are variable and must be individualized on the basis of the disease under treatment and the response of the patient.** The proper maintenance dosage should be determined by decreasing the initial dosage in small decrements at appropriate time intervals until the lowest dosage which will maintain an adequate clinical response is reached. If after long-term therapy the drug is to be stopped, it is recommended that it be withdrawn gradually rather than abruptly.

ALTERNATE-DAY THERAPY (ADT): ADT is a corticosteroid dosing regimen in which twice the usual daily dose of corticoid is administered every other morning. The purpose of this mode of therapy is to provide the patient requiring long-term pharmacologic dose treatment with the beneficial effects of corticoids while minimizing certain undesirable effects including pituitary-adrenal suppression, the Cushingoid state, corticoid withdrawal symptoms, and growth suppression in children.

Medrol (methylprednisolone) or other short-acting (producing adrenocortical suppression for 1¼ to 1½ days following a single dose) corticoids are recommended for ADT. Complete control of symptoms will not be possible in all patients. When considering this mode of therapy, keep in mind the basic principles and indications for corticosteroid therapy. The benefits of ADT should not encourage the indiscriminate use of steroids.

SUPPLIED: 2 mg—in bottles of 30 and 100 scored tablets; **4 mg**—in bottles of 30, 100 and 500 scored tablets and in 21 scored tablet Dosepak™ ; **16 mg**—in bottles of 50 scored tablets and in 14 scored tablet ADT Pak® (formerly Alternate Daypak®).

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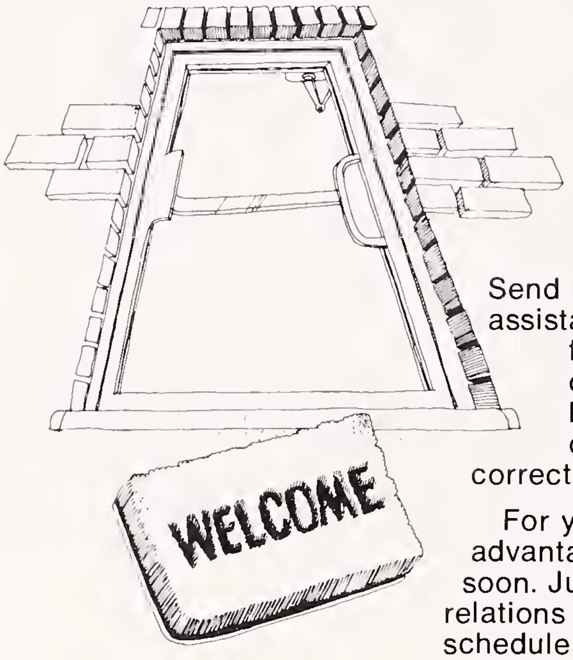

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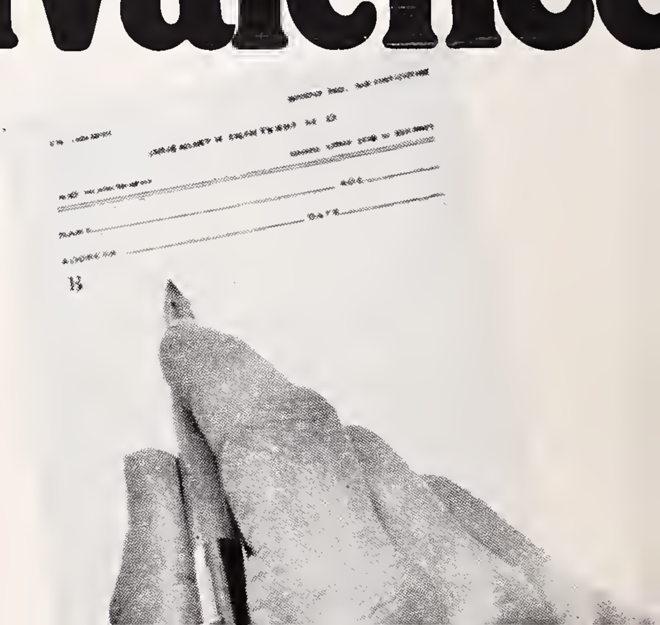
Bioequivalence



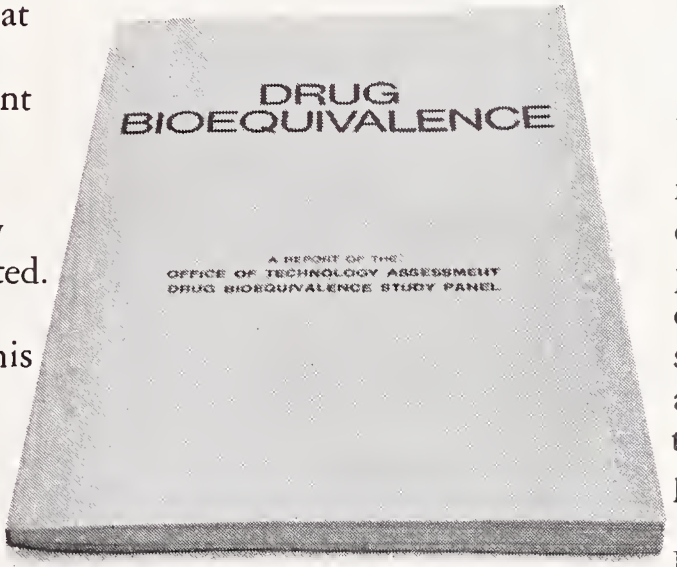
the weight of scientific opinion:

If the pharmacist substituted a chemically equivalent drug for the one you have specified for your patient—could you be certain of that product's safety and effectiveness simply because the chemical content was the same?

Definitely not, unless bioequivalence tests and other quality assurance checks had been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.


DRUG
BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:

(a) chemical equivalence; and

(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or

(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of your prescription...

P·M·A

Pharmaceutical Manufacturers
Association
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*This drug has been evaluated as "probably" effective for this indication.

See brief summary of prescribing information on facing page for Indications, Contraindications, Warnings, Precautions and Adverse Reactions.

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PARAFON FORTE® tablets help relieve pain, restore mobility and stop pain-spasm feedback by providing:

a nonsalicylate analgesic equal to aspirin for relief of pain,[1,2] yet unlikely to cause the gastric irritation,[2,3] allergic reactions[2] or increased bleeding time[4] associated with aspirin therapy...

and a skeletal muscle relaxant shown in extensive clinical studies to afford relief of discomfort in acute musculoskeletal conditions*[5-7] but which is not an antihistamine or tranquilizer derivative and is unlikely to produce a tranquilizing or sedative effect.[5,7,8]

* **Indications:** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows: "Probably" effective as an adjunct to rest and physical therapy for the relief of discomfort associated with acute, painful musculoskeletal conditions. The mode of action of this drug has not been clearly identified, but may be related to its sedative properties. Chlorzoxazone does not directly relax tense skeletal muscles in man.

Contraindications: Sensitivity to either component.
Warnings: *Usage in Pregnancy*—Use in women of childbearing potential only when potential benefits outweigh possible risks.
Precautions: Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or any signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped.
Adverse Reactions: Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, chlorzoxazone may possibly have been associated with gastrointestinal bleeding. While PARAFLEX® (chlorzoxazone) tablets and other chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately twenty-four patients, it was not possible to state that the dysfunction was or was not drug induced.
Usual Adult Dosage: Two tablets q.i.d.
Supplied: Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: **1.** Batterman, R.C., and Grossman, A.J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L.S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4. New York, The Macmillan Company, 1970. **3.** Vickers, F.N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C.H., Jr., and Britten, A.F.H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Vernon, W.G.: Curr. Therap. Res. *14*:801, 1972. **6.** Scheiner, J.J.: Curr. Therap. Res. *14*:168, 1972. **7.** Walker, J.M.: Curr. Therap. Res. *15*:248, 1973. **8.** Data on file, McNeil Laboratories, Inc.

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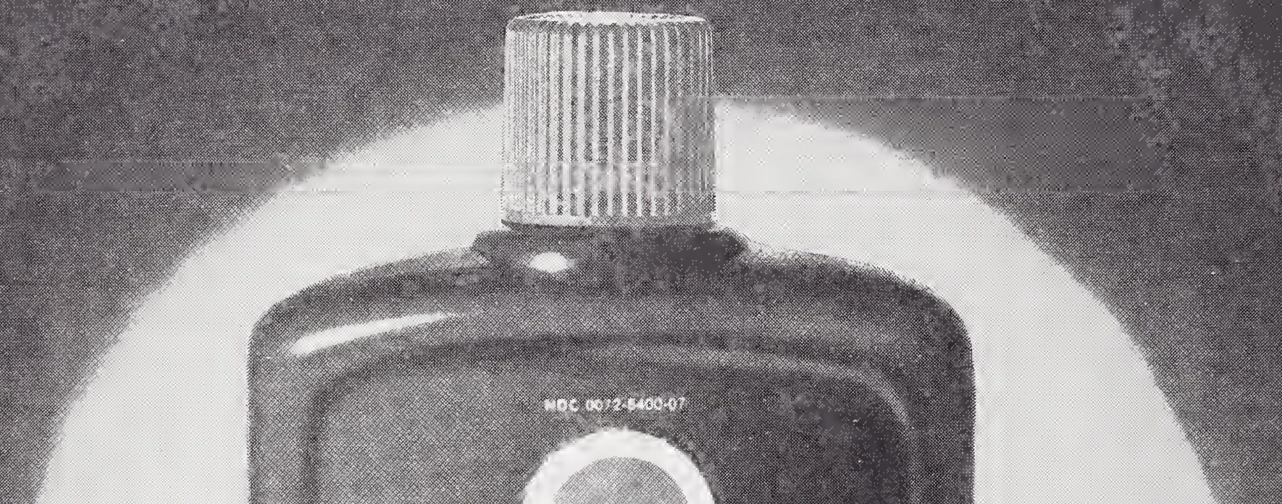

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WARNINGS: *Use in children:* In infants and children particularly, antihistamines in overdosage may produce convulsions and death.

PRECAUTIONS: Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness such as driving an automobile, operating machinery, etc. Patients receiving antihistamines should be warned against possible additive effects with CNS depressants such as alcohol, hypnotics, sedatives, tranquilizers, etc.

ADVERSE REACTIONS: Adverse reactions to Dimetapp Extentabs may include hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis, and thrombocytopenia; drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, hypotension/hypertension, headache, faintness, dizziness, tinnitus, incoordination, visual disturbances, mydriasis, CNS-depressant and (less often) stimulant effect, anorexia, nausea, vomiting, diarrhea, constipation, and epigastric distress.

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Indications: Provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with all phenacetin-containing products, excessive or prolonged use should be avoided. **Side effects:** Side effects are uncommon, although nausea, constipation and drowsiness may occur. **Dosage:** Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule every 3 to 4 hours as needed. For further details see product literature.

CIII Phenaphen with Codeine is now classified in Schedule III, Controlled Substances Act of 1970. Available on written or oral prescription and may be refilled 5 times within 6 months, unless restricted by state law.

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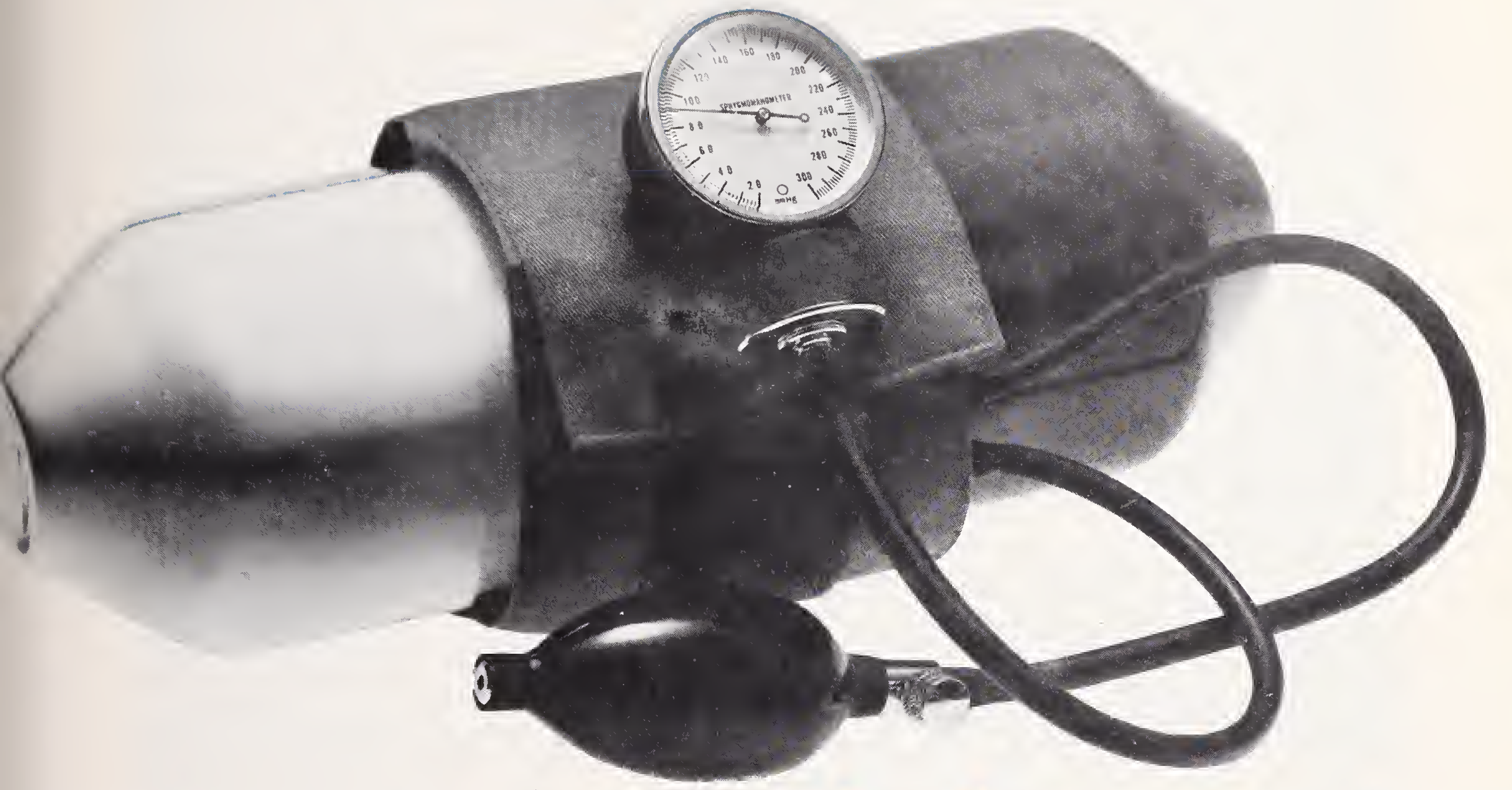

For long-term control of hypertension*

Before prescribing, see complete prescribing information in SK&F literature or *PDR*. The following is a brief summary.

* WARNING
This fixed combination drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Indications: *Edema:* That associated with congestive heart failure, cirrhosis of the liver, the nephrotic syndrome; steroid-induced and idiopathic edema; edema resistant to other diuretic therapy. *Mild to moderate hypertension:* Usefulness of the triamterene component is limited to its potassium-sparing effect.

Contraindications: Pre-existing elevated serum potassium. Hypersensitivity to either component. Continued use in progressive renal or hepatic dysfunction or developing hyperkalemia.

Warnings: Do not use dietary potassium supplements or potassium salts unless hypokalemia develops or dietary potassium intake is markedly impaired. Enteric-coated potassium salts may cause small bowel stenosis with or without ulceration. Hyperkalemia (>5.4 mEq/L) has been reported in 4% of patients under 60 years, in 12% of patients over 60 years, and in less than 8% of patients overall. Rarely, cases have been associated with cardiac irregularities. Accordingly, **check serum potassium during therapy, particularly in patients with suspected or confirmed renal insufficiency (e.g., elderly or diabetics). If hyperkalemia develops, substitute a thiazide alone. If spironolactone is used concomitantly with 'Dyazide', check serum potassium frequently**—both can cause potassium retention and sometimes hyperkalemia. Two deaths have been reported in patients on such combined therapy (in one, recommended dosage was exceeded; in the other, serum electrolytes were not properly monitored). Observe patients on 'Dyazide' regularly for possible blood dyscrasias, liver damage or other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving Dyrenium (triamterene, SK&F). Rarely, leukopenia, thrombocytopenia, agranulocytosis, and aplastic anemia have been reported with the thiazides. Watch for signs of impending coma in acutely ill cirrhotics. Thiazides are reported to cross the placental barrier and appear in breast milk. This may result in fetal or neonatal hyperbilirubinemia, thrombocytopenia, altered carbohydrate metabolism and possibly other adverse reactions that have occurred in the adult. When used during pregnancy or in women who might bear children, weigh potential benefits against possible hazards to fetus.

Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect. 'Dyazide' interferes with fluorescent measurement of quinidine.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis; rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting (may indicate electrolyte imbalance), diarrhea, constipation, other gastrointestinal disturbances. Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and, rarely, allergic pneumonitis have occurred with thiazides alone.

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OMENTAL TRANSPOSITION FOR LYMPHEDEMA

GABRIEL F. DE FREITAS, M.D.
HERBERT N. MUNHALL, M.D.

Radical surgical procedures for malignancy often necessitate the excision of regional lymphatic connections. Radical groin dissection and radical mastectomy are the two most common of these operations where curability may be related to the completeness of a "clean dissection". However, the meticulousness of the dissection may be followed by the postoperative complication of lymphedema. While the majority of patients may develop a tansient mild to moderate edema of an extremity, up to 10% of patients may develop marked lymphedema, which is cosmetically unsightly and, more importantly, produces a permanent functional impairment because of the increased size of the limb.

The increasing use of radical radiation therapy with extended fields has similarly added to the incidence of this problem. While significantly improved salvage of patients with both lymphoma and testicular tumors have resulted from the wider application of these newer radiation techniques, it is almost certain that increasing numbers of patients with lymphedematous limbs will be seen in the future. The treatment of chronic lymphedema has ranged from the extreme of non-operative methods using compression and diuretics for the mild case to the opposite extreme of extensive excision of skin and subcutaneous tissue with skin grafting for the severe case of lymphedema. Most of the surgical procedures have not been widely adopted because of the unpredictable surgical response, the unsightly cosmetic result, and the surgical complications that occur. Excellent reviews of the history and techncal aspects of the surgical approaches of chronic lymphedema have been published. (1,7)

The cause of acquired chronic lymphedema has been related to the interruption of the lymphatic pathways in lymphadenectomy or as a result of their obliteration by radiation therapy. The reversal of the lymphatic flow within the distal lymphatic channels produces a distended interstitial fluid space with swelling of the extremity. Chronicity leads to an increased risk of infection and fibrosis, and a vicious cycle ensues leading to unremiting lymphedema.

In 1966 Goldsmith and de los Santos (3) published their experience in the successful treatment of chronic lymphedema in the laboratory and reported the results of two clinical patients treated for incapacitating lymphedema resulting from radical groin dissection for malignancy. The omentum was transposed as a pedicle graft down to the knee with marked improvement in limb size, less pain, fever and episodes of lymphangitis. Later publications have adequately substantiated this benefit and hav showed evidence that lymphatic connections develop between the omentum with its rich lymphatic and venous channels and the lymphatics of the lymphedematous extremity. (3,4,5,6)

A case treated by omental transposition is the subject of this report. Case report: In 1955 at age 68 this patient was treated for epidermoid carcinoma of the penis by partial excision of the glans penis and radiation therapy to the inguinal areas. Four years later, in 1959, he developed a hard lymph node in each inguinal area. Both lymph nodes were removed. Each demonstrated

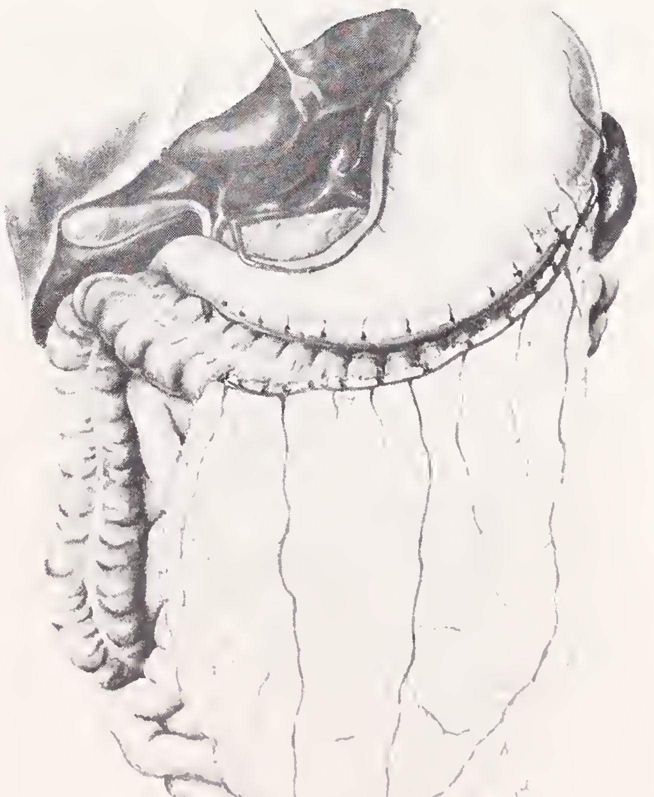

Figure 1
The omentum has been detached from the distal greater curvature of the stomach. The gastroepiploic arcade must be left within the omental pedicle.

From: 909 E. Brill, Phoenix, 85006 (Dr. de Freitas), 926 W. McDowell Rd., Phoenix (Dr. Munhall).

metastatic epidermoid carcinoma. He was treated with Cobalt 60 teletherapy to the groins and to the pelvis. Thereafter, he developed progressive and massive edema of the scrotum and left leg and slight edema of the right leg. By 1973 the edema in the left extremity had become so disabling that ambulation was possible only for very short distances and with great discomfort due to the extreme pain in the extremity. Examination revealed severe scarring of the skin and subcutaneous tissues of both groins, a huge scrotum, and marked edema of the left lower extremity down to the ankle. Motion of the entire extremity at all joints was restricted. Chest films and hematologic studies were normal. In December of 1973 at the age of 71, the patient underwent abdominal exploration and left groin exploration. Examination of the retroperitoneal nodes, the deep pelvic nodes, and the left superficial groin area with multiple biopsies failed to show any evidence of malignancy. Omental transposition was carried out.

TECHNIQUE

1. *Mobilization of the omentum.* (Figures 1 and 2) The omentum is detached from the transverse colon and then separated from the greater curvature of the stomach, leaving the gastroepiploic arcade within the omental pedicle. In this instance the gastroepiploic artery was divided at the pylorus to permit sufficient length of omentum to permit extension of the omentum down to the left knee. The left gastroepiploic artery would be divided if the right extremity were the lymphedematous one. The omentum can usually be lengthened to reach at least to the midcalf area.

2. *Preparation of the recipient site for the omental pedicle.* After sufficient omental length is achieved, a longitudinal incision is made in the medial aspect of the thigh. Another incision in the calf may be required if edema of the ankle is severe. In this instance a scrotal incision was made. The edematous subcutaneous tissue including the deep muscle fascia of the thigh beneath the skin flaps is excised.

3. *Creation of subcutaneous tunnel for omental pedicle.* (Figure 3). The omentum exits though the lower abdominal incision and is passed through a subcutaneous tissue down to the recipient site. The tunnel is created by blunt dissection. An alternate route can be created by bluntly dissecting a small retroperitoneal opening overlying the iliac vessels and anterior to

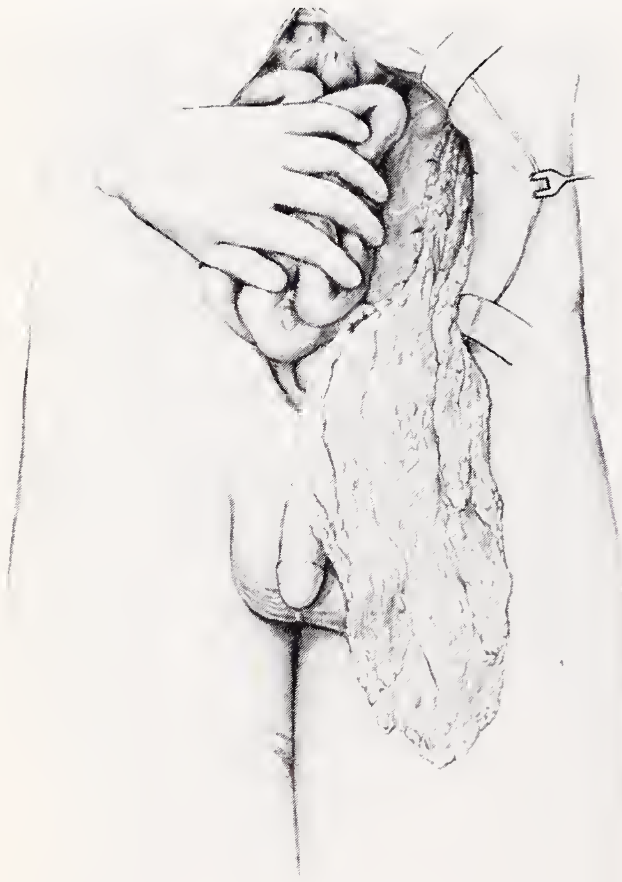

Figure 2
The omentum is sutured to the lateral peritoneal gutter. Torsion must be avoided.

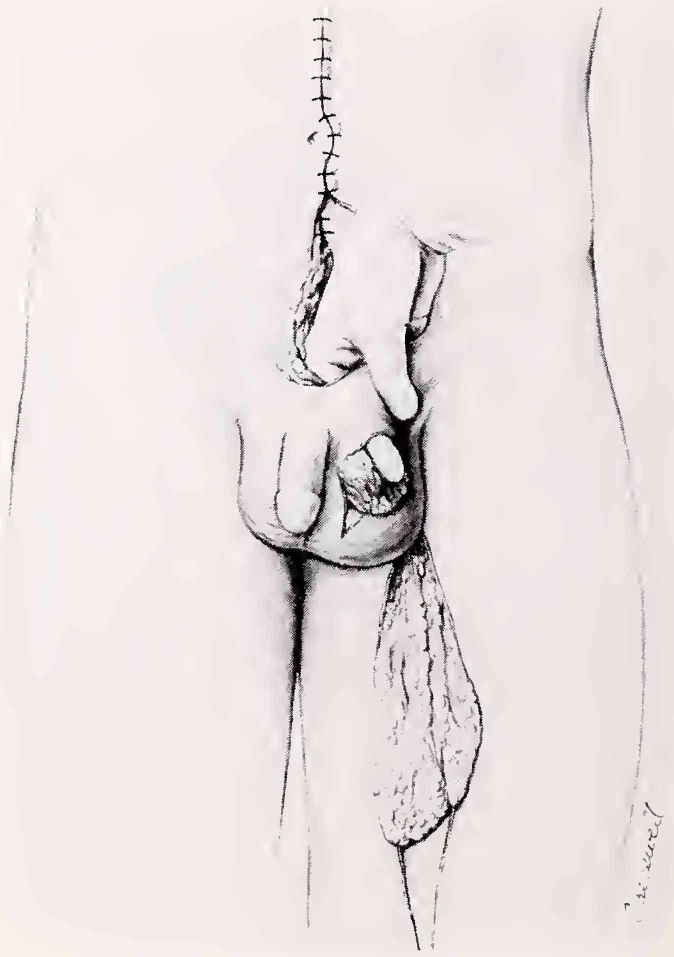

Figure 3
The omentum is brought out of the peritoneal cavity through the lower end of the incision through a subcutaneous tunnel. An alternate route can be created by bringing the pedicle out of the abdomen beneath the inguinal ligament.

the femoral vessels. This latter route was not used here because of the reported complication of inguinal hernia and possible constriction of the pedicle by the inguinal ligament resulting from motion at the hip joint.

4. *Fixation of the omental pedicle.* (Figure 4). Taking care to avoid torsion of the omental pedicle in the subcutaneous tissue, the omental apron is draped over the recipient site and secured by sutures to the muscle after proper orientation of the omentum.

The intra-abdominal omentum is sutured to the parietal peritoneum along the left gutter to prevent tortion or a possible post-operative internal hernia.

Closure of all incisions is carried out taking care to close the abdominal incision carefully around the omentum as it passes out of the peritoneal cavity to prevent both post-operative incisional hernia or constriction of the omental pedicle. Suction drains are used in the recepient site and no constricting bandage is applied to the area covered by the omental pedicle.

A similar technique is employed when the omentum is carried cephlad to an edematous upper extremity.

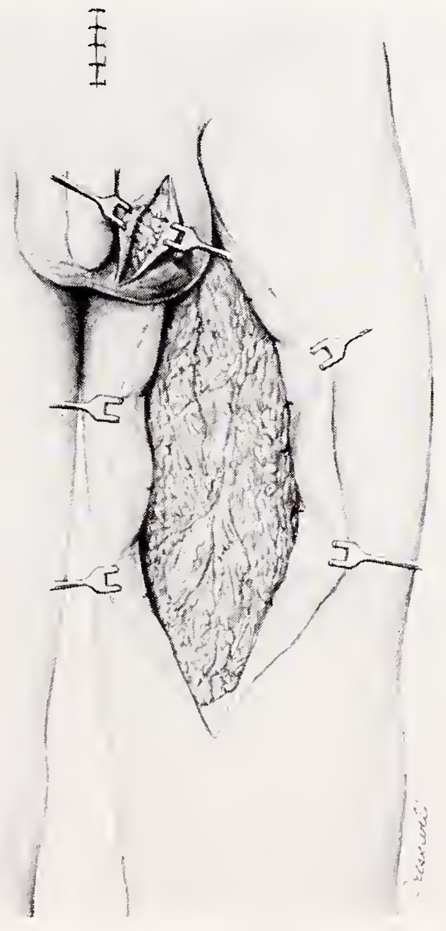

Figure 4
The subcutaneous fibrotic and edematous tissue have been excised and the thigh muscles laid bare in preparation for the omental pedicle. If edema extends to the ankle, another incision is made on the medial aspect of the calf. The omental pedicle is taken down further and sutured.

The patient had an uneventful post-operative convalescence and was discharged 10 days post-operatively. He has had marked reduction in the lymphedema of the leg and is able to walk without pain.

Conclusions: More patients with the complication of acquired chronic lymphedema will probably be seen in the future as radical radiation techniques and surgical procedures for cancer receive wider application. The resulting lymphedema is not only cosmetically unsightly but, more importantly, may produce a marked functional loss of the extremity, bouts of lymphangitis, and pain.

Rehabilitation of these patients with reduction in pain, fever, episodes of lymphangitis, and marked improvement in the lymphedema is possible with a one-stage omental transposition operation that appears to offer the possibility of permanent improvement and which can be done with a minimum of complications.

The technique involves the use of the omental pedicle brought to the lymphedematous extremity to establish a lymphatic connection between the lymphatics of the edematous extremity and the omentum with its rich lymphatic and vascular channels. A new pathway for the lymph is established. The operation can be used for lymphedema of any extremity since the omentum can be mobilized to achieve surprising length to reach the distal part of the affected extremity by careful detachment of the omentum from the stomach and meticulous preservation of the gastroepiploic vascular arcade.

We are grateful to Drs. W. Osborn and A. F. Morrison for referral of this patient.

From the Department of Surgery, Good Samaritan Hospital, Phoenix.

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SQUAMOUS METAPLASIA OF THE RENAL PELVIS

MARCY L. SUSSMAN, M.D.
ALEX NEWMAN, M.D.

Squamous metaplasia of the uroepithelium is an uncommon lesion, which is clinically significant as a possible precursor of squamous cell carcinoma. According to Lucké and Schlumberger (1) this condition may be found in two forms, viz, leukoplakia and cholesteatoma, but these may represent different stages of the same disease. The purpose of this paper is to call attention to this relatively rare condition and to report an example of each variety, both occurring in the renal pelvis.

CASE REPORTS

I RENAL LEUKOPLAKIA

A 23 year old woman was admitted to the hospital with colicky left flank pain. Patient had a history of previous urinary tract infections of several years duration with two similar episodes of colicky left flank pain during the past year. A catheterized urine specimen revealed fragments of tissue which on pathological examination were found to be keratinized squamous epithelium. Exretory urography demonstrated a bifid renal pelvis with persistent mottling. The inferior segment infundibulum was widened with slighly flattened papillae consistent with chronic pyelonephritis (Fig. 1). On cystoscopy, grayish-white skin-like debris was seen projecting from the left ureteral orifice; on microscopic examination, these flakes of tissue showed squamous epithelial cells with keratin. No tumor cells were found. Pathologic diagnosis was squamous metaplasia compatible with the clinical diagnosis of leukoplakia.

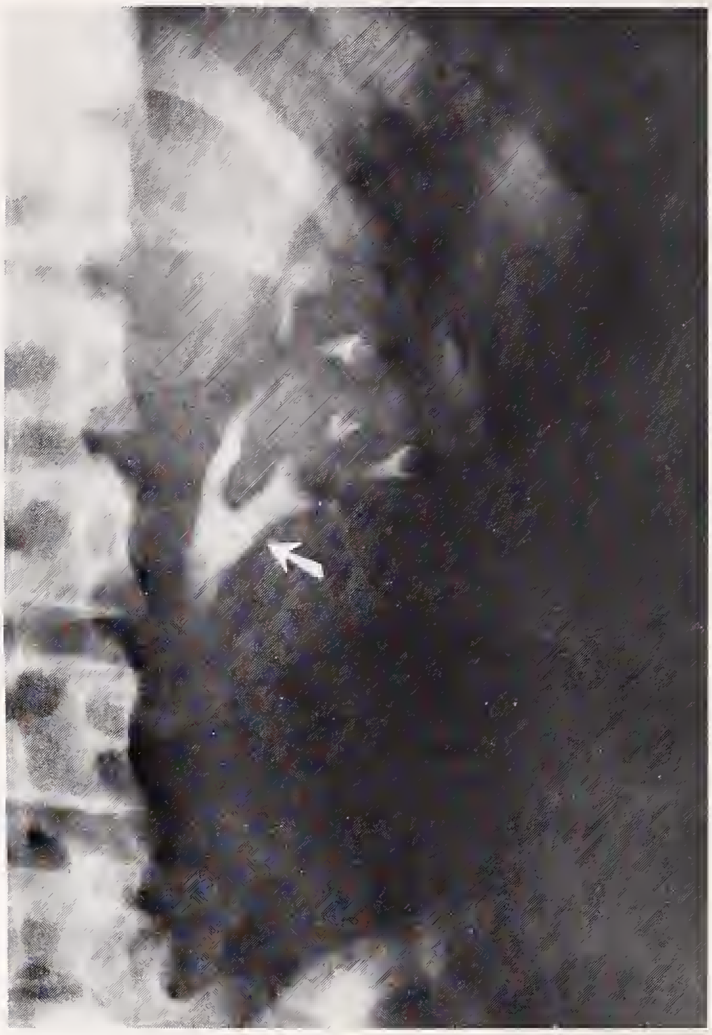

Fig. 1
RENAL LEUKOPLAKIA — Excretory urogram demonstrates persistent mottling (arrow) in renal pelvis or left kidney.

II RENAL CHOLESTEATOMA

A 49 year old male was admitted to the hospital complaining of right costovertebral pain. Patient related similar attacks over a period of many years and gave a history of chronic pyelonephritis dating back 35 years with numerous urinary tract infections and evaluations. Urinalysis showed 10-15 white blood cells but no red blood cells. Tissue debris found in the urine was acellular with no evidence of malignancy. Excretory urography revealed a persistent filling defect in the right superior infundibulum and upper margin of right renal pelvis, and bilateral renal calculi were found (Fig. 2a). These findings were confirmed by infusion urography (Fig. 2b) and tomography (Fig. 2c) which also showed contraction of the right kidney and marked scarring of the left kidney.

Right retrograde urography (Fig. 2d) confirmed the filling defect in the upper infundibulum projecting into the renal pelvis. The possibility of neoplasm was entertained, and surgery was recommended. Pyelotomy disclosed a large mass of yellowish and tan-gray material which on microscopic examination revealed squamous epithelium with large deposits of kyperkeratotic material. The pathologic diagnosis was cholesteatoma (Fig. 2e).

FROM: Dept. of Radiology, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008, (Drs. Sussman, and Newman).

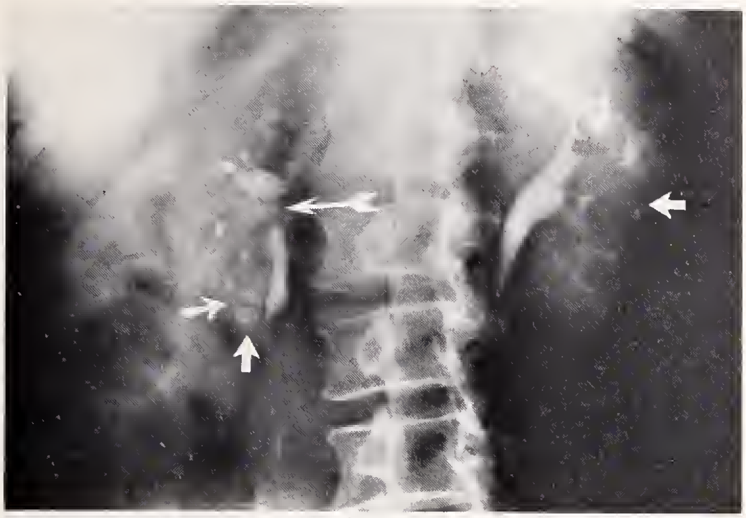

Fig. 2a
RENAL CHOLESTEATOMA — Excretory urogram in right posterior oblique view demonstrates filling defect (long arrow) in superior infundibulum and upper margin of pelvis of right kidney. Calculi are present in both kidneys (short arrows).

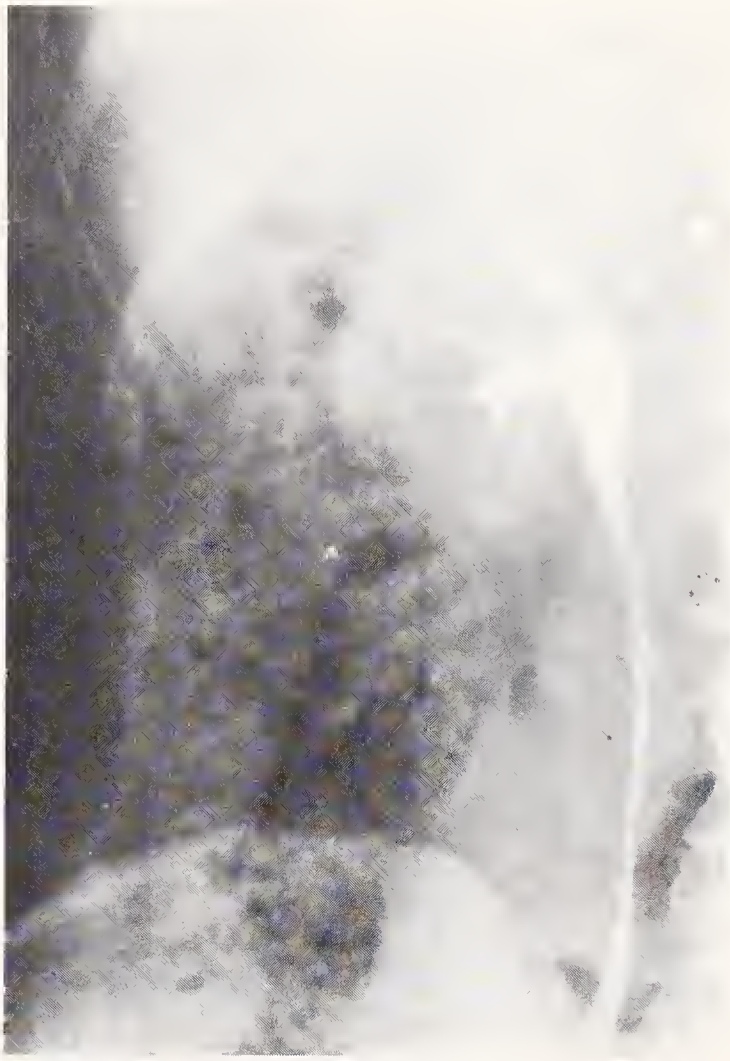

Fig. 2d
Retrograde urogram confirms persistent filling defect (arrow) in superior infundibulum extending into renal pelvis.

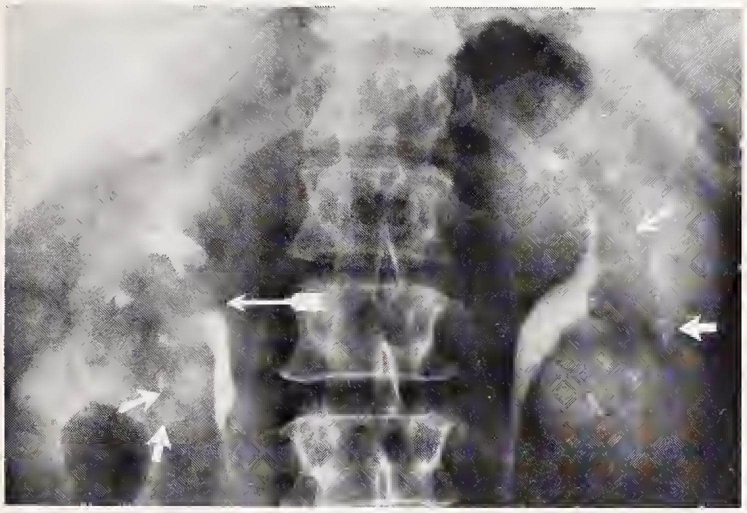

Fig. 2b
Infusion urogram confirms and accentuates findings of filling defect and calculi.

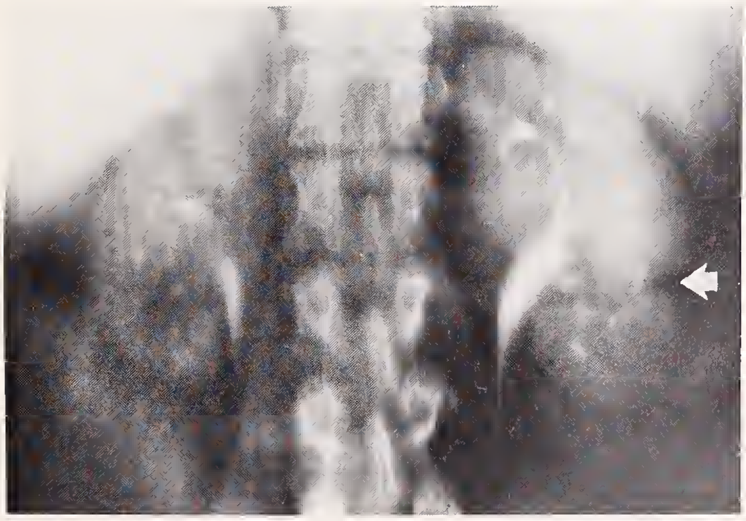

Fig. 2c
Tomographic section delineates a contracted right kidney and marked scarring of left kidney (arrow) in addition to changes demonstrated in 2a and 2b.

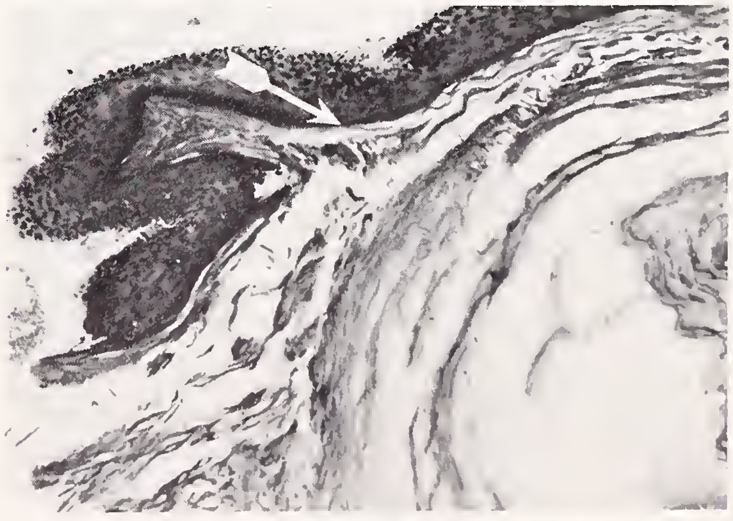

Fig. 2e
Photomicrograph of microscopic section of surgical specimen reveals large deposits of keratin underlying squamous epithelium.

RADIOGRAPHIC FINDINGS

The roentgen manifestations of squamous metaplasia in the renal pelvis are protean. In the earliest stages the excretory urogram may appear normal. With thickening of the mucosa, formation of a plaque, and piling up of keratin, an incompletely filled pelvis may be seen with irregularity and wrinkling Radiolucent or faintly radiopaque filling defects are seen when layers of keratin peel off; typically these may present a concentric arrangment often described as an onion-skin and moth-eaten appearance. The infundibula and calyces may be incompletely filled. Thus, the radiographic findings are mainly dependent upon the amount of keratinized desquamated epithelium in the renal pelvis and calyces and the tendency for these to remain attached. Calculi have been described in less than half of reported cases. The roentgenographic changes characteristic of hydronephrosis, pyelonephritis, and pyonephrosis eventually ensue. Ureteral involvement may present as an irregularity in the ureteral wall but more commonly shows destruction with filling defects and proximal dilatation.

DISCUSSION

Squamous metaplasia of the transitional epithelium lining the urinary tract is seen most often in the urinary bladder but occurs less often in the kidney pelvis and/or upper ureter. It is usually found in association with chronic urinary tract infection and is rarely bilateral. The symptoms are those of chronic infection with remissions and exacerbations of flank pain, chills, and fever. The passage of desquamated squamous cells, which may vary from flakes, gritty tissue, and white chunks to massive quantities of desquamated material is diagnostic.

Lucké and Schlumberger (1) describe the pathologic findings of leukoplakia as follows: Grossly, leukoplakia is characterized by the opaque, gray-white, wrinkled appearance of the mucosa of the renal pelvis or ureter or both. Though often diffusely involving the entire mucosal surface, the change may appear as scattered plaques. Histologically the normal transitional epithelium has been replaced by a stratified squamous epithelium showing pronounced keratinization. Occasionally, there may be downward extension of masses or cords of epithelium. In the underlying connective tissue are collections of lymphocytes, frequently appearing as perivascular infiltrates.

On the other hand, Lucke and Schlumberger describe the pathologic findings of cholesteatoma as follows: The desquamated epithelium may completely fill and distend the calyces and pelvis. On section the mass often appears made up of pearly white lamellae; however, it may also simulate tuberculous caseation necrosis. These tumor-like masses are termed "cholesteatoma". Microscopic section shows occasional small nests of well differentiated stratified squamous epithelium in the parenchyma of the papillae, but the bulk of the abnormal tissue, composed largely of desquamated epithelial cells, fills the calyx, replaces the normal transitional epithelium, and produces pressure atrophy of the adjacent renal parencyma. A chronic inflammation nephritis is also usually present.

Although less than 150 cases of renal leukoplakia have been reported, its clinical importance is significant as a possible precursor of squamous cell carcinoma (2). Indeed, differentiation from squamous cell carcinoma may present a problem. Likewise, renal cholesteatoma may be confused with squamous cell carcinoma (3). On occasion, renal cholesteatoma has been confused with dermoid or teratoma (1). Renal leukoplakia and cholesteatoma are believed by some to be the same disease seen at different stages (4).

Kuettner (5) postulates two prerequisites for cholesteatomas of the urinary tact, viz: leukoplakia and impaired urinary drainage. In some cases, a narrowing of the ureter by leukoplakia may be one of the causes of impaired drainage with resulting accumulation of keratin masses.

It may be concluded that the presence of squamous cells in catheterized urine, microscopically or macroscopically, can indicate leukoplakia, cholesteatoma or squamous cell carcioma. Pyeleographic changes may help to narrow the differential diagnosis although the possibility of a concomitant lesion such as tuberculosis must be borne in mind.

The etiology of squamous metaplasia of the urinary tract is obscure which therefore precludes pevention at the present time. Treatment devolves to control of infection and removal of renal calculi. Nephrectomy has been recommended, even when preoperatively diagnosed, because of the prolonged recurrent morbidity and the malignant potential, but this is subject to discussion.

In case of bilateral disease, preservation of parenchyma is essential. Adequate drainage is mandatory. Pyelotomy and partial nephrectomy may be advisable.

SUMMARY

1. Squamous metaplasia of the renal pelvis is a possible precursor of squamous cell carcinoma and may be manifested as leukoplakia or cholesteatoma.
2. The presence of desquamated squamous cells in catheterized urine in a variety of forms should alert the clinician to the possibility of leukoplakia or cholesteatoma.
3. Urographic findings may be of value in narrowing the differential diagnosis.

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CLINICAL TOXICOLOGY OF THE "DESERT POTATO":

Two Case Reports of Acute Jatropha Macrorhiza Root Ingestion

PAUL F. CONSROE, PH.D.
DAVID E. GLOW, M.D.

Case reports of two poisonings by plants native to Southern Arizona is reported. Of a special interest is the attached summary of poisonings for the year 1974. This chart particularly should be given wide distribution throughout Arizona.

Within the past couple of years, the Arizona Poison Control Information Center has received many reports of a rather characteristic acute toxicity resulting from the ingestion of the potato-like appearing root of an Arizona *Jatropha* plant. The following cases represent to our knowledge the first documentation of the typical clinical sequelae resulting from the acute ingestion of *Jatropha macrorhiza* roots.

REPORTS OF CASES

CASE NO. 1: An 18-year-old, well-developed Caucasian male was admitted to the hospital at 11:45 p.m. because of persistent vomiting, diarrhea and drowsiness. The patient had ingested 3 pieces (about 2 inches in diameter) of a plant root (identified as *Jatropha macrorhiza*) 4 hours earlier; symptoms emerged about 1 hour after ingestion. Except for drowsiness and tenderness of all quadrants of the abdomen, physical examination and hematologic and urinary laboratory values of the patient showed no striking abnormalities. Bed rest was prescribed and tap water was given *ad libitum* to quench the patient's extreme polydipsia. After an uneventful night's sleep, the patient was discharged at 10:30 a.m. the following morning without complications.

CASE NO. 2: A 48-year-old, well-developed Caucasian male was admitted to the hospital at 3 p.m. because of persistent nausea, vomiting and profuse watery diarrhea after ingesting an unknown quantity of a sweet tasting potato-like plant root (identified as *Jatropha macrorhiza*) at 8 a.m. Bouts of severe vomiting and diarrhea about every 3 minutes appeared 45 to 60 minutes after ingestion and persisted throughout most of the afternoon. The patient also complained of

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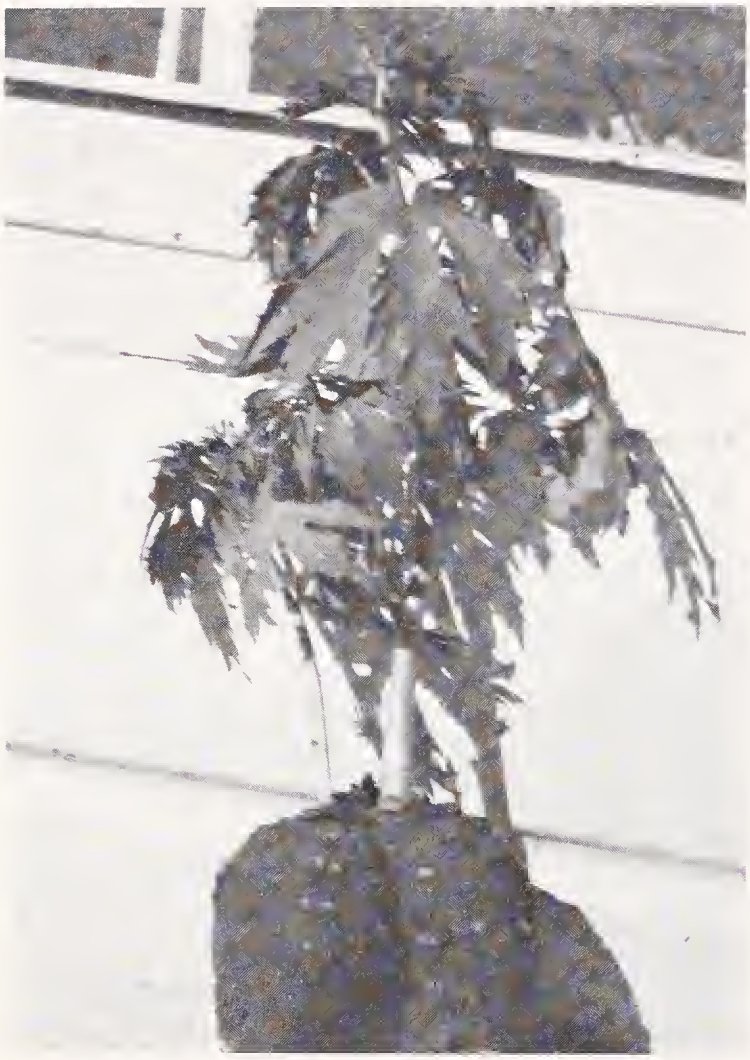

Fig. 1
JATROPHA MACRORHIZA

drowsiness, perspiration, salivation, polydipsia, cramps in the legs and abdomen and of feeling cold and clammy. Physical examination revealed a poor skin tissue turgor, sunken eyeballs, excessive salivary secretions and no lesions of mouth and throat. There was tenderness in all quadrants of the abdomen and deep tendon reflexes were hyperactive and intermittent muscle spasms in toes and calfs were apparent. Vital signs and urinary and hematologic values were normal except for elevations of hematocrit (60%) and hemoglobin (20.2 gm/100 ml). Initially, 1 liter of I.V. ringers lactate was given along with diazepam (5 mg, i.m.). Additionally, 1 liter of 5% dextrose in water, atropine (0.5 mg, im.) and diazepam (5 mg, i.m.) every 6-8 hours as needed were prescribed. After a restful night, the patient was discharged at 9 a.m., the following morning without complications.

COMMENT

Jatropha macrorhiza Benth. (Euphorbiaceae) is a perennial herb which is indigenous to Arizona, southern New Mexico and Mexico. In Arizona, it is found primarily in Cochise, Santa Cruz and Pima counties at elevation of 3,500 to 7,500 feet (1). As shown in Figure 1, the plant can be easily identified by the erect and tall (20-50) stature of the herb arising from a large tuberlike root (4-6 cm in diameter and 10-30 cm long), and the large green palmately lobed leaves (10-15 cm broad); not shown are the white or pinkish-purple flowers which usually bloom during May to October.

The primary symptoms of acute toxicity of *Jatropha macrorhiza* root appear after a delay of about 1 hour following ingestion and consist of severe nausea, vomiting and profuse watery diarrhea. Secondary complications may include drowsiness, cramps in the abdomen and limbs and dehydration. Volume replacement either by voluntary water ingestion (as in the first patient) or i.v. fluid administration (as in the second patient) appears to be a valid therapeutic consideration in treating the latter complication of *Jatropha* root toxicity. In addition, limited clinical experience suggests that secondary symptoms of abdominal cramping and excessive salivary secretions may be benefited by atropine and symptoms involving skeletal muscle spasm may be helped by diazepam. Moreover, the course of acute intoxication appears to be relatively short-lived as the patient may become asymptomatic within 24 hours with or without extensive treatment.

In general, the *Jatropha* genus of plants are reputed to contain toxalbumins (phytotoxins) which are slowly absorbed from the gastrointestinal tract and are presumably responsible for the toxic effects observed (2). Both the clinical sequelae and latent period associated with *Jatropha macrorhiza* root ingestion are similar to the findings of acute toxicity resulting from ingestion of seeds of other *Jatropha* species like *Jatropha curcas,* also known as barbados, physic or purge nut (3,4). This suggests that similar toxic principles may be found in a number of *Jatropha* species and possibly in different parts of the same species as well. Yes, it is not known whether a similar type of toxicity would result from ingestion of plant parts other than the roots of *Jatropha macrorhiza*, several toxic chemical compounds have been isolated from the roots (5), whereas relatively nontoxic chemicals have been identified in leaves, stems, flowers and fruits (6). However, additional research is needed to clarify the exact composition, loci, and pharmacological actions of toxic principles in the *Jatropha macrorhiza* plant before any clinical correlations of acute toxicity can be made.

In summary, two case histories are presented which illustrate that severe, persistent vomiting and diarrhea leading to dehydration, and skeletal muscle spasms of the abdomen and limbs are characteristic symptoms of acute poisoning from oral ingestion of *Jatropha macrorhiza*. Volume replacement to offset dehydration and appropriate adjunct therapy to minimize abdominal cramping, excessive secretions and skeletal muscle spasms may offer the best course of treatment. As the acute toxicity is relatively self-limiting, overall prognosis appears good.

ACKNOWLEDGEMENTS

Appreciation is expressed to the Sierra Vista Comunity Hospital, Sierra Vista, Arizona, for permission to publish the case histories presented in this report. The assistance of Dr. Charles T. Mason, Curator of the Herbarium and Consultant to the Arizona Poisoning Control Information Center, College of Pharmacy, University of Arizona, in identification of *Jatropha macrorhiza* and other collaborative help in the preparation of this manuscript is graciously acknowledged.

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Notice

To obtain toxicological information on poisons at any contact the Arizona Medical Center, University of Arizona, Tucson, Telephone number (602) 882-6300. One of the above professional staff members in the Arizona Poisoning Control Information Center will provide consultation service.

STATISTICS OF 2954 HUMAN INGESTIONS OF POTENTIAL POISONS REPORTED IN ARIZONA DURING 1974

AGE:	NUMBER	PERCENT
Involved under 5 year age group	1173	39.7
Involved 6 to 15 year age group	183	6.2
Involved 16 to 30 year age group	800	27.1
Involved 31 to 45 year age group	332	11.2
Involved over 45 year age group	177	6.0
Age not reported	289	9.8
NATURE OF INCIDENT:		
Accidental	1402	47.5
Self-poisoning	1003	33.9
Unknown	549	18.6
OUTCOME:		
Recovery	2857	96.7
Fatal	97	3.3

CAUSATIVE AGENTS

Internal Medicine	Number*	Percent
Aspirin	206	5.9
Other Analgesic	394	11.4
Barbiturates	210	6.1
Antihistamines	97	2.8
Laxatives	18	.5
Cough Medicine	30	.9
Tranquilizers	573	16.5
Others	525	15.1
Subtotal	2053	59.2
External Medicine		
Liniment	58	1.7
Antiseptic	29	.8
Others	34	1.0
Subtotal	121	3.5
Household Preparation		
Soaps, Detergents, Etc.	69	2.0
Disinfectants	50	1.4
Bleach	33	1.0
Lye, Corrosives, Drain Cleaners	19	.5
Furniture & Floor Polish	21	.6
Subtotal	192	5.5
Petroleum Distillate		
Kerosene	22	.6
Gasoline	77	2.2
Others	47	1.4
Subtotal	146	4.2
Cosmetics	92	2.7
Pesticides		
Insecticide	80	2.3
Rodenticide	13	.4
Herbicide	6	.2
Subtotal	99	2.9
Paints, Varnishes, etc.	58	1.7
Plants	108	3.1
Miscellaneous	421	12.1
Unspecified	176	5.1
Total	3466*	100.0%

* Some victims ingested more than one potential poison.

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WHEN WERE WE EVER SAFE?

It is now just three decades, plus one year, that our State Association launched this Journal under the editorship of the late Dr. Frank Milloy. It has now consumed five successors.

Frank Milloy, M.D.	1944 - 1953
R. Lee Foster, M.D.	1953 - 1956
Darwin W. Neubauer, M.D.	1956-1963
Robert F. Lorenzen, M.D.	1963 - 1967
Roland F. Schoen, M.D.	1967 - 1970
John R. Green, M.D.	1970 - 1975

You may not recall that the earliest news from the Arizona Territory, of a medical nature, appeared irregularly in the JAMA. An annual bulletin was sometimes published in those early times and it contained the essays of those chosen to render these at the annual meetings, and few other items of interest to the members. These publications are now "collectors items" and if you possess one or more of them you should carefully consider where it should be permanently deposited. We are not aware of any library that has a complete set.

Then followed some more irregular bulletins, with the appearance of SouthWest Medicine, that publication served as the official vehicle for the State Society under the astute editorship of W. Warner Watkins, M.D.

From 1939 to 1943 semi-annual bulletins again appeared. Then the Govenors of SouthWest Medicine decided to discontinue publication "for the duration", there was a war — W.W.II. So, the Council of the Arizona State Society seized this opportunity to launch, "a Journal devoted entirely to the State of Arizona."

Just to indicate how "how the names change, but the problems remain the same," the main thrust of the first number was to point out the dangers and perils facing organized medicine from the proponents of the Wagner, Murray, Dingle bill then before the national congress.

This proposed that medical care was to be financed by a levy against the employee and the employer—6% from each against the first $3000 in wages. It was to be administered by the Surgeon General of the Public Health Service and the Social Security Board. The Public Health Service has now almost disappeared from the scene and H. E. W. is now the monstrous bureaucracy encompassing many medical activities together with the Social Security Board.

But, the problems remain the same, as Dr. Green pointed out in the April issue, the recently passed Public Law 93-641, The National Health Planning and Resources Act of 1974 by the 93rd. Congress, is in effect as disassembling to the medical profession as the act proposed thirty years before.

Other articles in the orginal numbers of *Arizona Medicine* dealt with poliomylitis — then still a national scourge —, dicumoral and

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Editor's Page

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pulmonary embolism, the organization of the Salt River Blood Bank, since developed into a nation wide venture, the need for more beds for tuberculosis cases — California had closed its doors to the health seeker from "back East." Arizona was the unwilling recipient of these cases; two fatal cases of rabies were reported and several articles relating to war medicine and meeting the medical needs of the Armed Forces are noted.

Although the creeping control of medical practice by congressional acts has engaged the attention of all physicians during these thrity years, the sleeper was the explosion of malpractice suits and the resultant exorbitant premiums. This has produced a crisis more vesuvian than anything Messers Wagner, Murray, or Dingle dreamed of. This indeed is an interesting time, if it was not so dangerous. But, when were we ever safe?

John W. Kennedy, M.D.
Editor

President's Page

ANNUAL ADDRESS OF THE PRESIDENT

WILLIAM C. SCOTT, M.D.

I would certainly be less than human if I didn't admit the deep pleasure as well as the tremendous humility I feel in taking office as your president. If dedication and endeavor can suffice to repay this honor, you may rest assured that together we will reap the harvests of a cooperative approach to Arizona medicines aims and objectives.

In 1966 Paul Jarret took office as medicare was inacted and compared himself to an earlier tarred and feathered victim. Since that time other presidents have weathered such legislative programs as HMO's, PSRO's, RMP's and CHP's, have suffered under financial constraints continued long after the rest of the economy was deregulated and survived both inflation and recession. Today, however, we find Arizona's physicians, as well as the rest of our nations providers of health care, beleagured by concerted attacks of legislators, commentators, publishers and others who assert that the crisis in American medicine calls for radical changes in methods of delivery of health care to our patients.

As a profession dedicated to the well being of our patients, we must stand fast together as a bulwark against the waves of federal rule and regulation before they adversely affect those in our care. Wilbur Cohen, after being assistant secretary of health in HEW for three years, states that ideas conceived in congress have a gestation peiod of about 28 years. It is now 28 years since the passing of the Social Security Act. As we with our

20-20 hindsight look back over the step by step inroads of the federal legislative acts since that time, the grand design of federal control emerges quite obviously. On January the fourth of 1975, President Ford signed public law 93-641, The National Health Planning & Resources Act, which on close examination ties all the loose strings of PSRO, RMP, CHP and HMO together, Instead of the spectre of national health legislation being that which had the most potential for harm, now we find that national health insurance is only the financing mechanism to implement what's already here. As the congressional leaders turn to the AMA as medicine's voice and counsel, our legislature turns to ARMA for educated provider input. Now more than ever the federation of county, state and AMA needs to stand together with a common and united voice to clammer, to protest, and to insist that the rules and regulations to implement these legislative inroads into the practice of medicine are written in such terms as to protect confidentiality, freedom of choice, and the physician-patient relationship we feel so necessary in providing quality medicine. But perhaps still more important is our individual involvement in the initial organizing attempts to form the organizations which will implement these legislative aims. Though we may be allowed only minority representation, let that minority be a vocal, influential, and respected one. In all public opinion poles the individual physician continues to command high respect. Let us place ourselves in key positions to use our influence positively and so direct the emerging patterns of health care down paths acceptable to us and beneficial to all our patients.

Mr. Kennedy and Mr. Inuoye would apparently use the present professional liability crisis as a lever to push us into a position where either inability to obtain coverage or its prohibitively expensive costs would force us to accept federal terms of reimbursement and conditions of practice. Your association, maintaining as does the AMA, that this is a problem demanding local solution, has represented you well at the Arizona Legislature. Two bills embracing the concepts of change in statute of limitations, strengthening of written informed consent and increasing use of medical-legal panels have been introduced into a favorable legislature. These are but a beginning, as throughout the nation, all states are exploring inovative and alternative approaches.

The blue ribbon committee of Representative Burton Barr will continue on between sessions to study the problem. Hopefully, further legislative relief and improved legislation will emerge next year.

In the interim, ARMA will continue to work with the Travelers Insurance Company, not only to provide coverage at a reasonable cost, but also to mount a strong program of prevention. Better vehicles for informed consent, improved peer evaluation at the time of reapplication and pilot programs of arbitration are all part of an expanding effort to ameloriate risk to our families, but even more to help control health care costs to our patients.

It is indeed ironic that while attempts to control costs by legislation such as PSRO are being glossed over as really just continuing medical education vehicles, the basic tenants of peer review were established by the American College of Surgeons years ago with medical audit and tissue committees. These concepts have spontaneously grown as a voluntary and self-disciplinary and educational tool in all major hospitals and when combined with the utilization review provided by our own foundations accomplish all the objectives of PSRO without the expenditure of a single federal red cent. Perhaps they did develop faster under the spectre of PSRO, but our house is inorder and, I for one, resent the implication implied by that legislation, that we physicians have to be forced into providing quality health care. The public and our patients need continuing education that the unsurpassed quality of American medicine demands adequate financial support and that programs which only consider the cost of care can only be ultimately detrimental. As in all technology, our sophistication of technique has outstripped its sociological acceptance. This creates a continuing public relations problem that can only be properly addressed in a face to face office educational program and in the commuity contacts that we as physicians can make when we act as proper concerned members of the lay community.

This past few years inflation has insidiously flung its tenacles about us; practice overhead, liability coverage and office rental as well as increaing time committments to satisfy hospital regulations continue to increase the cost of providing health care. These same inflationary spirals have been reflected in the cost of providing you with both ARMA and AMA services. While we may argue the relative merits of pharmeceutical advertising in AMA journals, most certainly medicine would be the loser if publications cease, meetings were cancelled, medical school educational criteria became chaotic, hospitals lost accreditation standards and overall post graduate educational programs diminished in quality. For these reasons the delegates to AMA in December 1974 voted a temporary assessment with indepth studies to determine the need for possible fee increases in the future to assure a viable AMA.

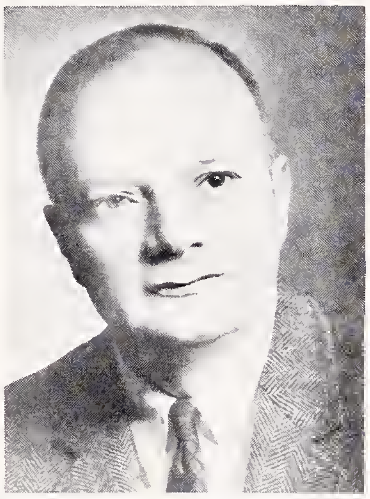
At the ARMA level, we too have suffered ravages of inflation. Rather than decrease or omit viable progressive programs, we too will come before you demanding an increased financial committment in the years ahead to not decrease but to augment our committee involvement of you, the membership, in important decision making of the future of Arizona medicine. Your support of this committment is crucial.

Three years ago the Arizona Medical Association committed its members to a program of continuing medical education. To that end, most major hospitals have developed ongoing approved schedules of quality presentations for staff which meet the rigid criteria of both AMA and ARMA. Less than 2% of our membership failed to attain those standards during the first cycle of certification. All the specialty disciplines are engaged now in evaluation of the difficulty of equating continuing education with improved patient care, to the end that meaningful and measureable criteria may be developed to further improve ARMA's education efforts. Your medical education committee is deeply concerned that its efforts result in truly better care for our patients and to that end are continually changing their standards as new and inovative programs are developed which do motivate and do actually then result in learning that directly translates into better patient care. I am proud of the response of our membership to this program for it is not tokenism but does represent the fact that in Arizona physician's are deeply committed to life long learning experience. Even though these rising standards of patient care encompass needs in both better trained para-professionals and increasingly expensive hardware, the medical profession has continued to demonstrate fiscal responsibility by keeping its rising costs beneath those of the overall economy. I would urge that each of you continue this sustained effort to resist inflation so that only the escalating uncontrolled price of professional liability insurance remains as foremost in creating a situation in which our services would be either too expensive for many, or completely unavailable to all.

The ensuing year is a legislative year in which we face continuing inroads into our privacy. The manpower bill before Congress directs when and what our young physicians will practice. Other bills will control what drugs we prescribe and what devices we may use. Rules and regulations yet to be written may well control the location of our offices and the fees we may charge. The AMA is tooling up to teach such skills as negotiation and ARMA studies the legal implications of non-participation and collective bargaining. Our actions this year will be crucial if we are to protect our patients rights, provide opportunity for our young physicians to practice the quality of medicine that they're being taught and maintain our revered physician-patient realtionship. They must be concerted, coordinated, combined and dedicated. Let us stand together as members of ARMA and the AMA in all these tribulations with one face and one voice.

Dean's Page

OFFICE OF MEDICAL EDUCATION



NEAL A. VANSELOW, M.D.

At the University of Arizona an Office of Medical Education provides educational consultation to the faculty of the College of Medicine. For the past three years, College of Medicine faculty members have found the office to be a valuable source of interchange and assistance for many education questions and concerns.

The undergraduate curriculum is the most important concern of the Office of Medical Education. Faculty members responsible for new undergraduate courses such as Preparation for Clinical Medicine and Human Behavior and Development are assisted in course planning and evaluation by a team of an educational specialist, a psychologist and a nurse-scientist. In the Pharmacology Department an educator works with the department faculty in planning and improving their experimental Pharmacology course. In Pediatrics several educational consultants are assisting faculty to develop simulated patient management situations for use by Pediatrics clinical clerks. For the past several years professional eduators have also assisted the Pediatrics Department with an assessment of its clerkships. In another Pediatrics study, patients' mothers are being trained to help teach students the skills of Pediatric interviewing.

The new third year of the three-year curriculum, the elective year, is being planned and assessed by a faculty subcommittee with assistance from the Office of Medical Education reports on the curriculum's effectiveness as indicated by the National Board of Medical Examiners test scores and other data. With the expansion of a program of continuing medical education in the College, the Office of Medical Education will be providing assistance with courses and workshops throughout the state.

Educators in the Office of Medical Education are also conducting research on many questions. For example, a continuing longitudinal study of students has included the first follow-up of graduates from the Classes of 1971, 1972, and 1973. Thirty-six percent of the graduates contacted were in primary care specialities and sixty-four percent were in other specialities; most graduates reported adequate or more than adequate preparation for the practice of medicine in general as well as for their specialities in particular. They offered specific information on courses and clerkships which were outstanding and a few with could be improved. The follow-up study also obtained ratings of our graduates by the graduates' chiefs during postgraduate house staff service.

Other research studies address a variety of topics. One study analyzes students' biographical data and medical school experiences to determine whether it is possible to predict their specialty choice. Special research attention is being given to the specialty choice decision-making of students who enter medical school interested in primary care as well as those who eventually hold house staff positions in primary care areas. Questions of medical "problem-solving" skills are being investigated in a study of the tests and prodedures used by other medical schools. A pilot study of the medical faculty's teaching effectiveness is being conducted at the request of a faculty subcommittee; the pilot study will give useful information on ways to encourage and improve good teaching in the College and on ways to identify outstanding teachers.

The Office of Medical Education staff is composed of faculty members and Ph.D. candidates from the University of Arizona's Department of Educational Psychology. Faculty members include a specialist in learning and instructional methods, a research and statistics specialist, and an expert in education testing. These faculty members, who consult part-time in the Office of Medical Education, are assisted by five doctoral-level educational psychology students — three specialists in learning and instruction, one nurse-scientist, and a computer specialist for data analysis. The entire team of educational consultants assists the Associate Dean for Academic Affairs in a wide variety of curriculum and research tasks.

Professional educators in the College of Medicine? In many areas their consultative help and research provide the College with improved methods for teaching the next generation of physicians.

Neal A. Vanselow

Obstetrics and Gynecology

THE "PRIMARY" CARE OF WOMEN

There has been considerable discussion recently concerning the role of the obstetrician-gynecologist as the primary physician for women. This month the obstetrics and gynecology page is devoted to a policy statement on the topic by the American College of Obstetricians and Gynecologists.

There has been some confusion and misinterpretation of the College position regarding the obstetrician's role as the primary physician for women. This concept received its greatest impetus in the late Willis Brown's inaugural address on his assumption of the office of President of our College. Since that time there have been various interpretations of what is meant by "primary physician" and particularly the role of the obstetrician-gynecologist in this concept. Many individuals have equated the term primary physician with general practitioner, assuming that such connotation would mean that he should be trained to mange all the illnesses of women. However, the College's policy position specifically affirms that the obstetician-gynecologist is the first and foremost a highly trained specialist in the field of female health problems related to reproduction and the reproductive organs. In the care of his patients he is often the portal of entry for women into the general health care delivery system. He is frequently the primary or sole contact that the patient has for advice and direction in medical matters. In addition, the children he has delivered in his function as obstetrician often turn to him through their parents. He therefore must be equipped to render the best possible health care advice for his patients. Although a physician consultant, he frequently remains, in the eyes of the patient, the primary physician.

Though comprehensive care is not the prime function of the obstetrician-gynecologist, he should identify all significant health problems of his patients and manage those associated with pregnancy or those considered to be within his capabilities as an obstetrician-gynecologist. He will refer unrelated problems of health. His responsibilities include the delivery of acute and chronic health care as noted above, the gathering of a standard data base and the formation of a problem list therefrom. Those problems which are recognized as outside his purview are identified for the patient, who is then offered guidance in obtaining appropriate medical and/or surgical assistance.

The American Medical Association and many state medical societies recognize four classes of physicians as primary physicians — internists, family physicians, pediatricians and obstetrician gynecologists. As such they function in providing advice and direction and occasionally initial care in the patients they serve. In this manner they direct the patient and guide her in the health care system.

This primary physician concept requires that the obstetrician gynecologist recieve adequate medical education covering these guidelines at the medical school level as well as in his residency training. It does not allow the practice of permitting obstetrics and gynecology to be an elective course at the medical school level, an unfortunate and invidious concept that has developed in many medical school curricula.

The proper concept of the obstetrician-gynecologist as primary physician should be incorporated in all discussions involving health care of women, and especially those related to governmental activities in this field. Unfortunately some governmental agencies have recognized only family physicians and pediatricians in this category, to the detriment of our specialty.

For the above reasons, the College position regarding the obstetrician's role in primary health care of women is well stated: "To a large number of American women the obstetrician-gynecologist is the principal source of medical supervision and advice and in this sense functions as their primary physician. This practice has provided continuity of care in many regions that might otherwise not have been achieved. The College accepts this responsibility and will include this concept of primary care of women in its various activities, including undergraduate, resident and continuing education of the obstetrician-gynecologist." By accepting our role as the initial portal of entry of many women into our helath care system we will render an invaluable service to our patients and to our society in general.

Keith P. Russell, M.D.,
FACOG
President

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Clinical Oncology In Arizona

CARCINOMA OF THE PROSTATE

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WILLIAM W. BOHNERT, M.D.

This new section in Arizona Medicine is specifically targeted to the subject of cancer care in the state of Arizona. Recognition of the importance of cancer management has been underscored by the establishment of the conquest of cancer as a national goal. In this column, current concepts in cancer management and recent advances in cancer research that are relevant to Arizona, will be discussed each month. Cancer therapy is currently changing at an extraordinarily rapid rate, and the views expressed on this page should not be considered as static recommendations. The editors of this column will select key topics and invite interested physicians and allied health professionals from Arizona to write components related to areas of their expertise in cancer.

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INTRODUCTION: Prostatic carcinoma is the most common cancer in man over 50 years of age with an incidence of 36 cases per 100,000 population each year or 54,000 new cases diagnosed per year in the United States.[1] Almost all the tumors are adenocarcinoma although occasionally a transitional cell carcinoma or sarcoma will be found. Most often squamous carcinomas are found to arise from the urethra rather than the prostate itself. This cancer is the third most frequent cause of death from cancer in man and will lead to an estimated 18,000 deaths each year.[1] There is no way to estimate the morbidity caused by metastatic disease or local tumor invasion.

TABLE I
5 YEAR SURVIVAL RATES BY TUMOR GRADE

GRADE	% SURVIVAL
I	59.5
II	34
III	16
IV	5.6

ALL PATIENTS TREATED BY ORCHIECTOMY AND ESTROGEN

DIAGNOSIS AND STAGING: Early in the natural history of the disease, most patients are totally asymptomatic. The value of an annual digital rectal exam in males over 40 years cannot be overestimated. This is the only way early CA of the prostate can be detected.

When a suspicious nodule or other abnormality is detected, urological consultation is indicated. The diagnosis is then made either with needle biopsy, open biopsy at the time of preineal exposure or in the tissue resected transurethrally.

Once the diagnosis of malignancy is confirmed, appropriate staging procedures should be performed. The choice of appropriate therapy depends upon the accurate staging of the disease. The most commonly used staging system was devised by Whitmore in 1956. (See Table 2).

The most commonly used procedures for proper staging included IVP, chest and skeletal x-rays, acid and alkaline phosphatase, bone scan, lymphangiography, bone marrow aspiration or biopsy, and more recently, pelvic lymphadenectomy.

Clinical staging is frequently inaccurate. In three large series of radical prostatectomies by Belt, Whitmore and Jewett, the disease was underestimated in 45% of the cases and overstaged about 15% of the time. Surgical staging is now being done with pelvic lymphadenectomy prior to radical surgery or radiotherapy with increased accuracy.[9]

TABLE II
STAGING OF PROSTAIC CARCINOMA

Stage A: Tumor not clinically manifest; found as focal microscopic involvement. Low grade
4% of all patients
Stage B: Tumor clinically localized to prostate. All grades may be isolated nodule or diffuse infiltration of gland.
Stage C: Localized extraprostatic extension but no metastases.
Stage D: Distant metastases; includes involvement of baldder and rectum.
50% of all patients

Surgical staging has increased the accuracy. Most studies show a 30% error in clinical vs. surgical staging which includes laparotomy and lymph node biopsy.

PROGNOSIS: The prognosis and overall survival rate is determined by the stage and grade of the lesion, the type of treatment, and the age of the patient. In general, high grade tumors are also high stage tumors with an associated poor survival, (and conversely, low grade tumors are usually low stage with excellent survival prospects).

Histological features which are of prognostic value are:

> Extension to the seminal vesicles, invasion of the capsule and grade of tumor.
>
> Perineural lymphatic invasion has no prognostic value.[2]

Variations from benign to the most malignant histological pattern may be seen in a single microscopic section. Usually the area of greatest anaplasia is considered the determinate of the malignant potential (although there is not uniform acceptance of this among pathologists).

When the tumor is focal in the gland, 76% of the patients survive five years as opposed to 45% survival when there is diffuse infiltration of the gland. Approximately 50 to 60% of all patients having occult or localized carcinoma of the prostate will survive five years without any treatment whatsoever. This is a special group of patients that accounts for only about 4 or 5% of all prostatic carcinoma. In the Veteran's Administration Cooperative Study, only 3% of the stage I and II patients died of carcinoma of the prostate, but in Stage III, 25% and in Stage IV, approximately 50% died of carcinoma of the prostate.[8] Because of the age of these patients and the fact that many of them received estrogen, and orchiectomy, anywhere from 20 to 40% of them will die from cardiovascular causes.[8]

TREATMENT:

Stage A: The so-called occult carcinoma is found in approximately 10% of all pathological specimens examined following TUR — prostate or enucleation for clinically benign disease, Nearly all of these are Grade I and appear as an isolated microscopic focus. Nationwide studies suggest no additional therapy is needed for these patients and their life expectancy is similar to the general population.[2] [6] Lesions that are less than well differentiated should be treated more aggressively.

Stage B&C: There is presently a great deal of controversy regarding the treatments of patients with this stage of disease. The controversy really boils down to radical surgical treament versus curative radiotherapy.

Radical surgery is a time tested procedure with impressive 5, 10 and 15 year survival rates in Stage B disease in several large series.[4] [5] [9] Radical surgery should be limited to the patients with an asymptomatic isolated nodule completely confined to the prostate (5-10% of new patients with carcinoma). Radical perineal or retropubic prostatectomy is the procedure of choice in this patient after proper staging has been done. With radical surgery, impotence occurs in 95% of all patients and 2-10% of patients have some incontinence. In patients with diffuse infiltration of the prostate, but still limited to within the gland, the cure rates drop rather precipitously, probably due to understaging. In these patients and in those with Stage C disease, radiotherapy is considered superior for attempted cure.

Approximately 30 to 40% of all patients presenting with prostatic carcinoma are eligible for curature radiotherapy. This includes patients with negative bone scans and lymphangiogram and normal bone marrow biopsy. Individual patients may require laparotomy to determine their lymph node status.

Definitive radiation therapy usually consists of external beam irradiation utilizing high energy machines (either Cobalt or linear accelerator). Our method is to give approximately 4500 to 5000 rads whole pelvis radiation to destroy possible microscopic foci of disease in the pelvic lymph nodes. This is followed by an additional 1500 to 2000 rads to the prostate bed itself most often utilizing rotation therapy, to bring the total dose to 6500 to 7000 rads. The results are quite good with only about 10 to 15% of patients developing persistent radiation sequellae. These include dysuria, frequency and diarrhea. There is a 15% incidence of impotence or incontinence. The disease free survival rates are 50 and 30% at 10 years in patients with Grade II to III tumors in Stages B and C respectively.[3] [7]

Of more recent interest is the combined use of surgical staging, intraoperative implantation of the prostatic bed with either gold, radon or iodine 125 seeds, and following this with external radiation treatment. This technique has been developed by a number or institutions and will soon be available in Arizona.

Stage D: Approximately 50 to 60% of the patients will present with metastatic disease and most of these will sooner or later become symtomatic. In these patients the design of any therapy is aimed at palliation or remission rather than survival.

Endocrine therapy has shown to be very effective in control of tumor. Various programs of endocrine manipulation have been used for over 30 years since the pioneering efforts of Huggins and Hodges. These have included orchiectomy, ablation, steroid therapy and more recently, treatment with anti-androgens. This therapy was originally based on the observations that adult prostatic epithelium undergoes atrophy when adrogenic hormones are reduced. The source of adrogenic hormones are from the testicle (95%) and the adrenals (5%). Estrogen suppresses luteinizing hormone release from the pituitary which suppresses testosterone production by the testes.

Thus, the first line of endocrine therapy is either orchiectomy or estrogen therapy. The usual dose of estrogen is one milligram of Diethylstilbestrol daily. This produces fewer side effects of fluid retention, thromboembloic phenomenon, and cardiovascular or cerebrovascular problems than a dose of 5 milligrams a day with equal effectiveness in most cases.[8]

If reactivation of symptoms occur following orchiectomy or estrogen therapy, adrenalectomy, hypophysectomy and corticosteroid therapy may be used or the estrogen dose increased.

For skeletal metastases, external radiation can be used rather effectively by giving 2500 to 3000 rads in the space of two weeks to localized painful bony metastases.

Radioactive P-32: This isotope should be used when there is diffuse bony disease which is symptomatic. Techniques usually involve priming therapy with either high dose androgen, estrogen or parathormone. This is followed by a fractionated course of 10-12 mCi of P-32 which deposits in the bone and destroys local tumor tissue. This creates symptomatic relief in approximately 60% of patients so treated, the duration of response being about six months.

CHEMOTHERAPY: Until recently, very little information has been available regarding the potential of chemotherapy in carcinoma of the prostate. Few drugs have been tested. There are several well organized cooperative studies now under way in various centers under the leadership of the National Prostatic Cancer Project.[10] Studies of single agent, sequential and combined chemotherapy will necessarily lead to safe effective chemotherapy as adjuncts to surgery and/or radiotherapy for prostatic cancer in all stages.

FUTURE: It is difficult to know what therapeutic regimen will be used the future for prostatic cancer. Radical surgey is excellent if limited to Stage B patients with an isolated nodule. Radical radiotherapy is showing promise at present for Stage B and C patients.

The importance of an integrated approach to management of the patient with prostatic carcinoma cannot be overemphasized. The best chance for optimal therapy occurs when experienced physicians specializing in the care of these cancer patients cooperate from the time of initial diagnosis.

The key to evaluating the proper and most effective therapeutic modality is careful clinical and surgical staging with long term follow-up and evaluation of data with the final goal of improved survival and control of local disease.

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Seminars in Endocrinology and Metabolism

Continuing with the present issue of Arizona Medicine is the series of articles entitled "Seminars in Endocrinology and Metabolism." The purpose of these short review articles is twofold. First, due to the rapid proliferation of new knowledge in the field of endocrinology and the multiple tests available for their evaluation, short, clinically oriented reviews would enable the physician to keep abreast of these newer developments as they relate to their practice. In addition, with great stress being placed on voluntary recertification in many subspecialties, reviews such as they could serve as an authoritative, succinct teaching forum. The editors will endeavor to accomplish these goals by utilizing the talents of practicing physicians as guest contributors to this series. Feedback, both positive and negative, is encouraged in order to help us fulfill these objectives.

MARSHALL B. BLOCK, M.D. **Editor**

MULTIPLE ENDOCRINE ADENOMATOSIS (MEA): CLINICAL IMPLICATIONS

JOHN P. HEILEMAN, M.D.
LAURANCE B. NILSEN, M.D.
MARSHALL B. BLOCK, M.D.

Recent advances in the field of endocrinology have greatly increased our understanding of multiple endocrine adenomatosis syndromes (MEA). Although their classification is somewhat arbitrary, they do occur most frequently in two particular patterns. MEA Type I is referred to as "Wermer's Syndrome". The pancreas, parathyroid and pituitary glands are most frequently involved. The disease is transmitted in an autosomal dominant pattern with a high degree of penetrance. Therefore, 50% of men and women

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are equally affected. Approximately 60% of these patients have ulcers and 2/3 of those patients have a typical Zollinger-Ellison syndrome. In addition to gastrin production, the pancreatic tumors may produce excessive quantities of insulin and/or glucagon thus expanding considerably the clinical presentation of this syndrome. Eighty-five per cent of such patients demonstrated parathryoid adenomas or hyperplasia. Sixty-five per cent of the MEA Type I patients have pituitary adenomas of which approximately 50% are functional.

The MEA Type II syndrome has recently undergone subclassification into Types IIa and IIb. The Type IIa variety is also referred to as "Sipple's syndrome" and is inherited in an autosomal dominant fachion. The principle components of MEA IIa are pheochromocytoma, medullary thryroid carcinoma and hyperparathroidism (either adenoma or hyperplasia). Patients with Type IIb have, in addition to medullary carcinoma and bilateral pheochromocytomas, mucosal neuromas, hyperplastic corneal nerves and other abnormalities. These patients usually do not have parathyroid disease and genetically the mode of inheritance is unclear at this time.

At first glance, there does not appear to be an embryological similarity between the various glands involved in these syndromes. However, ingenious histochemical studies by Pierce (1,2) and an excellent review by Wickert (3) has helped to resolve this conceptual difficulty. Endocrine glands come from all three dermal layers: Ectoderm; pituitary, adrenal medulla; endoderm (foregut derivative): — parathryoid, thyroid, pancreatic islets, ultimobronchial body; mesoderm (neprogenic ridge): — ovaries, testes, adrenal cortex. Derivatives of the first two produce polypeptide hormones and are embryologically related to the nervous system in that they derive from buds of the primitive alimentary tract which itself is an invagination of the neuroectodermal layer. It is not surprising then that other tumors derived from the alimentary canal may also produce similar hormones. Some of these include oat cell, bronchogenic and gastric carcinomas. Cells having the ultipotential ability to produce polypeptide hormones in these locations have been found to have similar histological and enzymatic activity which has resulted in their being designated A for amine P for precursor, U for uptake, and D for decarboxylation (APUD) cells. These terms indicate the common steps involved in the production of polypeptide hormones. Endocrine glands derived in the mesoderm are not generally involved in the polyendocrine syndromes unless a APUD cell tumor is secreting a stimulating hormone, e.g., oat cell carcinoma producing corticotrophin and thus producing adrenal hyperplasia and/or adenoma. Thus, there is a common thread tying together not only all of these endocrine hypersecretory states but also the ectopic hormone production that occurs in tumors arising in pulmonary and gastrointestinal regions.

The diagnosis of the MEA syndromes is dependent upon which hormonal effects predominate at the time of evaluation. For instance, patients with MEA Type I can present with significant fasting hypoglycemia. Pancreatic adenomas producing excessive quantities of insulin have been reported to be the presenting feature of the familial variety of this syndrome. In contrast patients with MEA Type II may present in one of several ways. Besides the obvious hormonal oversecretion of catecholamines producing hypertension these patients can be recognized by the presence of associated findings. These include the mucosal neuromas on the lips and tongue, hyperplastic corneal nerves, a characteristic facies or other skeletal abnormalities. In any event, once one hypersecretory gland is found a search must be undertaken to assess the functional status of the other associated endocrine glands in order to determine whether the syndrome is present. Likewise, if positive, a careful family history is extremely helpful.

Once the syndrome is recognized, diagnostic laboratory methods must be utilized to help confirm the clinical impression. Development of the radioimmunoassay method to measure polypeptide hormones has enabled the normally small concentrations of these various compounds to be measured in the peripheral circulation and has permitted their values in abnormal states to be quantified. However, the increasing awareness that circulating hormones exist in more than one form, e.g., in a precursor-active principle and/or active principle-degradation product relationship has both helped and at times hindered the usefulness of such measurements. For instance, since the perifollicular cells of the thyroid gland are thought to be related to the development of medullary thyroid carcinoma, measurements of calcitonin which these cells secrete can enable early detection of patients with the Type II variety of MEA. On the other hand, measurements of parathormone levels in some of these patients may give rise to values in the normal range when they indeed have parathyroid hyperplasia and/or adenoma formation. Previous studies have shown at least three and perhaps as many as four or five different circulating polypeptides exhibiting various degrees of cross reactivity with parathormone antisera used in the parathormone immunoassay.

In addition to measurements of hormones secreted by these various glands there are other techniques which may be utilized to help localize these tumors. For a pheochromocytoma, it is sometimes desirable to know whether the lesion in question is located within an adrenal gland or in an extra-adrenal location. Although pheochromocytomas in the MEA Type II syndromes have been for the most part located in both adrenal glands, extra-adrenal locations may also occur. Therefore arteriography is sometimes helpful to delineate the location and size of such tumors. The increasing use made of ultrasound techniques may be employed to localize the presence of intra-abdominal masses. Recent experience has proved beneficial in diagnosing bilateral pheochromocytomas in a patient with the MEA Type IIb syndrome (4).

Besides the well-known hormonal products of each gland involved in these MEA syndromes there are other compounds which can be secreted. Prostaglandins have been found in medullary thyroid carcinoma patients as has histaminase, an enzyme involved in degrading peptides. High levels of both have been found in patients and they serve as useful markers postoperatively to see whether residual tissue is present. In addition medullary thyroid carcinomas have been found to secrete serotonin and 24 hour urines for 5-Hydroxy-indolacetic acid excretion can be useful diagnostically. There may be in addition a characteristic calcification pattern in the thyroid gland of patients with medullary thyroid carcinoma which can be visualized on an anterior neck x-ray film. Thryoid function studies of patients with medullary thyroid carcinoma have not revealed any consistent changes although a large study of such patients has not yet been undertaken.

Therapeutically, once a diagnosis of multiple glandular involvement is made, it would appear most cautious to deal first with the most life-threatening. In the case of MEA Type I pituitary or pancreatic lesions, depending upon which predominates, would be the one to treat first. In regards to MEA Type II the presence of pheochromocytomas should be considered first therapeutically. One recent report attests to the necessity of carefully evaluating adrenal medullary activity in such patients before performing a neck exploration (5). Preliminary treatment in a patient with pheochromocytomas should include alpha and beta blocking agents prior to exploratory laparotomy. Preoperative blood volume determinations to assess intravascular volume, which can be contracted in these patients, is also helpful. In regards to medullary thyroid carcinoma the multiple location of perifollicular cells in the thyroid gland and the recent observation that perifollicular cell hyperplasia may precede the development of medullary thyroid carcinoma a total thyroid-ectomy is probably in order. In regards to hypercalcemia in these syndromes it has been reported that following adrenal-ectomy preoperative hypercalcemia cometimes normalizes. The exact cause is not known with certainty. However the possibility of parathormone production by the pheochromocytoma has been offered as one possibility. Nevertheless there have been reports which have indicated that hyperclacemia may persist following removal of pheochromocytoms so that a search for underlying parathyroid adenoma or hyperplasia should be undertaken and persued vigorously if hyperclacemia does not remit following surgical correction for the chromaffin-secreting tumors (4).

Longterm followup necessitates evaluating possible recurrence of either pheochromocytoma and/or medullary thyroid carcinoma. Since it is very difficult to predict histologically whether a pheochromocytoma is benign or malignant, repeat urinary catecholamine studies must be obtained at reasonable intervals, expecially if symptoms develop. Likewise yearly basal and stimulated calcitonin and/or histamine levels should probably be obtained in patients with known medullary thyroid carcinoma following total thyroidectomy to assess disease activity. In addition, the patient's numerous family members should be contacted and studied at appropriate medical centers in their localities. It is hoped that by such a search affected family members who are presently asymptomatic will be detected and thus protected therapeutically.

In summary there appears to be a common basis for the multiple endocrine tumors that constitute the various forms fo MEA syndromes. The diagnosis of the syndrome is dependent upon the awareness that the presentation of one type of hypersecretory state can be associated with others. Once the existence of the syndrome is established therapeutic procedures should be employed in such a way as to treat the more life-threatening ones first. Longterm followup is indicated in all patients but especially so in those with medullary thyroid carcinomas and pheochromocytomas since the latter's extent is difficult to decide upon at the time of surgery. Finally, family members should be screened for the possibility of asymptomatic disease.

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AM *Department of Health Services*

THE WIC PROGRAM

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ACTING DIRECTOR

> *Other circumstances being the same it may be affirmed that countries are populous accordng to the quantity of human food which they produce or can acquire, and happy according to the liberality with which this food is divided, or the quantity which a day's labor will purchase.*
> *Thomas Robert (1798)*

The relationships between food and happiness and food and good health have been obvious for many years. In these times of high food prices, unemployment, and economic recession, it is not surprising to find the problem of poor nutrition rather widespread among the population of Arizona. Even if the quantity of food eaten curbs the hunger pains and fills the stomach, the poor quality and low nutritional value of food consumed may still leave an individual malnourished. Many simply cannot afford to eat well. Others are not sophisticated in the means of getting the best nutritional value per dollar spent on food. To combat the long term deleterious effects of malnutrition, the U.S. Department of Agriculture has instituted a Special Supplemental Food Program for Women, Infants, and Children (WIC).

WIC is a pilot supplemental feeding program funded by USDA and administered by the Arizona Department of Health Services through local health agencies. The program services nearly 24,000 low income women, infants, and children in all of Arizona's counties and on eight Indian reservations. The program provides participants with vouchers, checks with a food list attached, which can be spent in local stores. The vouchers can purchase specific nutritious foods such as milk, cheese, eggs, cereal, fruit juice and iron-fortified baby formula.

Basic medical data is collected on this Navajo baby to monitor the effectiveness of the supplemental feeding program.

The WIC program is not simply a food give-away project, WIC gathers medical data for follow-up referral, and for judging the success of the feeding program. In addition, nutrition education focuses on the need for and the proper use of these specific foods in the participant's diet.

Careful screening determines who is eligible to participate in the program. Under WIC, high risk pregnant women, postpartum women up to six weeks after delivery, lactating women up to one year after delivery, infants, and children under four years of age are eligible for service. The pregnant or lactating women must exhibit one or more of the following characteristics: inadequate nutritional patterns, anemia, history of prematurity or miscarriage, or underweight or obesity. Infants or children served must demonstrate a deficient pattern of growth, nutritional anemia, or inadaquate nutritional patterns. All WIC participants must meet the basic socio-economic eligibility requirements of the health clinic offering the service.

Since the program was initiated in January 1974, basic medical data (height, weight, hematocrit, hemoglobin and cholesterol) collected on the clients has shown gratifying results. Nearly 20 percent of all WIC participants showed low hemoglobins when entering the program. This level has been reduced to 12 percent after six months with WIC.

The benefits of WIC go beyond improved health indicators, and may be responsible for contributing to the acceptance by an individual of the responsibility for his own health status and for his participation in available health service programs. Health professionals dealing with WIC clients have noted an increased early identification of developmental problems, increased referrals for services to private physicians throughout the State and increased use of family planning and immunization services.

WIC is primarily preventive. One of the conditions it can prevent is mental retardation. As

Blood testing is done as part of the WIC program to measure Hemoglobin and Hematocrit values.

you know, malnutrition deeply affects a mother's reproductive performance and is a basic underlying factor responsible for poor physical and mental growth and development of both mother and child. At today's prices, the $4,582,200 granted to the WIC program in Arizona for 1975 by the USDA would provide lifetime institutional care for fewer than five severely retarded persons. For this reason, using the funds for a preventive program makes more sense both from the fiscal and the human standpoints.

Arizona WIC program was the first such project in the nation, and was developed by the Department's Bureau of Nutrition Services and the Nutrition Council of Arizona. Since its inception, the Arizona program has won nationwide attention and is studied as a model by other states. The success of the WIC program is largely due to the fact that it is one component of a total nutritional delivery system operated by DHS. Continuation of the WIC Program has been severely threatened by the failure of President Ford to include the Program in his new fiscal budget. In response to this threat, both houses of Congress have introduced bills which would authorize and fund a continuing WIC program. In late April, the House Bill was passed by an overwhelming majority. The Congressmen have received written support from WIC participants, health professionals, and the retail grocers associations.

If you have patients whom you believe may be eligible for services under the WIC Program, have them contact the county health department, or call the Department's Bureau of Nutrition Services at 271-3478.

Editorial

SELF-MADE MAN

WILLIAM B. McGRATH, M.D.

Any definition of mental health usually comprises a listing of desirable traits. You know: If you can love and be loved; if you have confidence and satisfaction in your career; if you can put your work aside and be relaxed, and so on. Kipling's "If . . . , then you are a man, my son." is a prototype.

Now a very few fortunate individuals have more or less inherited affluence and opportunity and encouragement. In the literal meanings of the words "title" and "grant" they can feel entitled to realize their potential; they can take for granted their welcome in the world.

The only price they pay is arrogance, a dearth of self-criticism and perhaps some insensitivity to the needs and vulnerabilities of others. These lucky creatures can be as relatively self-contained as they appear to be.

Not so the self-made man, the man who has attained whatever level of success by his own strivings. Figuratively he has moved into a richer neighborhood. He cannot whole-heartedly embrace the compensations of success. Forever a new-comer, how can he feel one hundred per cent sure of his welcome? Familiarity does not come that easily. He is, again in the literal sense of the word, not entitled to perequisites since he has had to work for them. Because he did not inherit his position in society he will have to earn it again tomorrow and again the day after.

The self-made man reads a description of the mature adult. He may view the itemized traits as ideal goals. But measuring himself against the ideal, he is uncomfortably reminded of his own shortcomings.

He supposes that most of his friends and colleagues, unlike himself, are as sure of themselves as they seem to be. At work and in society most of us learn to put on a salesman's facade, with practiced display of the features of a mature person.

But when he is alone the self-made man is morose, as sullen and gloomy as an ape. And he is hardly ever quite free of nervousness.

In any interval of idleness, unless he is reading or watching television, he will feel a distrubing little tug, as if he ought to be doing something to improve himself. When he tries to relax and simply be, his mind goes into fibrillation and his thoughts are almost frighteningly incoherent, unorganized. Or he will ward off the evil spirits by singing old ditties silently in his head, putting stupid substitutes to rhymes he can't remember.

It is a kind of unhappy narcissism. Internally insecure, he overvalues external appearances: his car, his attire, his hair, his plaques and diplomas. He cannot stand the tiniest blemish of his complexion and he will dig and squeeze at it until it bleeds.

His own needs of recognition and appreciation are insatiable. But he is a miser. When he pays a compliment he expects one in return. The books must be carefully balanced because he always feels so close to bankruptcy. He will gladly accept certain honors, but he wants to be coaxed.

And even when he does get recognition, his joy is tainted by a vague anxiety, as if he might somehow be punished for having called attention to himself. Regardless of his income he must rationalize any luxury, defending or justifying himself and paying his dues with buyer's remorse.

As in the early movies and vicariously he likes to read about aristocrats and the very wealthy. Instead of begrudging them he wants them to be even more princely and rich.

Incompletely impressed with himself he will try too hard to impress others, embellishing his qualifications and accomplishments and those of his wife and relatives. Despite repeated resolutions to the contrary, he will talk too much about himself, conveying with doubtful success that if you knew more about him you would find him interesting and acceptable.

If he has a sense of humor it is like that of a little brother: always the put-down, the sarcastic joke at the other person's expense — and this, again, in spite of his resolutions. He can tease but he himself cannot take teasing. His reaction to any real or imaginary criticism will be a fermenting resentment, and he will rehearse how next time he will get even.

The self-made man is punctual, honest, conscientious, not out of regard for the other person, but because of his exquisite sensitivity to rejection. He may seem to be seeking approval but mostly he is avoiding disapproval. Virtue is not its own reward when it is based on a essentially negative orientation. The newcomer, the man on perpetual probation, secretly resents the necessity of ingratiating himself (buying friendship) on the one hand or else living in relative isolation and loneliness.

Earlier we described constellations of childish traits which characterize this or that personality disorder. To put it in a capsule: the "aristocrat" is convinced that he has none of these undesirable features. And the self-made man believes privately that he has all of them.

A man may be quite successful in the role he has assumed. Yet he will be apprehensive whenever he is not functioning and validated in that role. There is an awful lot of pollyana psychology in print. Take our word for it: When the normal man is alone he is morose, as sullen and gloomy as an ape. Have you noticed? No-one whistles anymore.

Book Review

DISORDERS OF THE RESPIRATORY SYSTEM

G. Cummings and S. J. Semple Blackwell Scientific Publications, London 574, 1973, $25.00

At the outset this reviewer is impressed by the paperback format. As transitory as textbooks usually are — by the constant updating of medical progress — to invest in a glossy hard back appears untidy.

The authors point this treastise to the medical student, post-graduate and primary practitioners. The first, section deals with pulmonary physiology in all its minutiae — but with the best of British flavor in writing. Where else will you find an alveolus as "appearing rather like a hay cock", and if you have summered in the midlands you will immediaely remember the ingenious devise to dry the new mown hay in a climate that is almost always water saturated. Or consider the river system numbered by the Strahler system as applied to the branching bronchi.

The second section deals with clinical diseases and with specific directions for their management. In the section on bronchial asthma — definite and limited uses of steroids are described with a full read out of the many complications attributable to over use, such as the stunted growth of the young — which will produce a unique dwarf — together with the collapse of vertebral bodies, hypertension and diabetes which may follow steroid use in adults.

Roentgen descriptions of various chest diseases are included, no illustrations.

The English view of chronic bronchitis — including treatment and epidemiology is well done.

The index is ample, so that you may go straight to a particular disease or clinical problem — including a delightful section on disordered pulmonary function in the newborn.

J. W. Kennedy, M.D.

Topics Of Current Medical Interest

THE "SICK DOCTOR"

The American Medical Association sponsored a "milestone" conference on April 11th the 12th, 1975, in San Francisco, to explore ways and means of more effectively coping with and coming to the aid of those of our peers who are troubled.

Their number is not great, yet statistical estimates indicate that 3 to 5% of us are functionally and professionally impaired to varying degrees by alcoholism, drug dependency, mental, physical and aging problems.

Medical societies and boards have rules and mechanisms to deal with these matters. However, there is a threat to the doctors' status and even licensure involved at this level. Therefore the troubled physician and even his family and his peers tend to conceal and psychologically "deny" his problem.

Arizona is among the several states which have initiated steps to provide earlier and less threatening help to intervene and prevent the problems from growing toward critical proportions.

ArMA's "Physician Rehabilitation Committee" was formed in early 1974. The committee consists of about 11 physicians from various communities and specialities.

When the troubled physician's reluctance to admit or expose his problem results in procrastination, a concerned colleague, friend or spouse can, by appealing to the committee (or any member thereof), bring him to obtain the help he needs.

Upon notification, a sub-committee of 2 or 3 committee members will arrange an interview to explore the problem with the "patient doctor", including the spouse, if desired.

Thus the physician will be provided with more timely counsel toward appropriate plans and treatment without undue exposure to his county or state society or the State Board of Examiners.

Confidentiality will be maintained to the fullest extent possible, depending on the circumstances.

The committee will also aid in assuring completion of treatment by follow up to recovery and beyond it, to insure against relapses.

It is needless to point out that medical ethics demands of each of us, not only awareness but action in behalf of our colleagues. We are our brothers's keepers. We can feel grateful that our brothers may show effective concern for ourselves. That is the purpose and function of this committee, brotherhood in a stressful profession, often beleaguered by public demands, criticism and even condemnation and litigation.

If this committee is appropriately utilized it can be effective not only in helping our troubled individual colleagues, but in maintaining the higher levels of medical ethics and practice.

PHYSICIAN REHABILITATION
COMMITTEE
John Bartness, M.D.
Otto Bendheim, M.D.
William E. Bishop, M.D.
John T. Clymer, M.D.
Donald L. Damstra, M.D.
Bernard M. Kuhr, M.D.
Laurence M. Linkner, M.D.
Walter B. Tomlinson, M.D.
Karl E. Voldeng, M.D.
Eleanor A. Waskow, M.D.
Richard E. H. Duisberg, M.D., Chairman

TRAVELERS INSURANCE CO.
PROFESSIONAL LIABILITY INSURANCE APPLICATION CLARIFIED

Many question have been raised about the new Traveler's Professional Liability Insurance application and renewal forms. Basically these forms are designed to obtain the kind of information necessary to truly analyse the many facets of the malpractice problem. It is also designed to help your Professional Liability Insurance Review Committee. To help you understand the logic and reasons for the questions, the following questions were asked and answered.

Q. Would it be accurate to say that all items of information requested on this application form — other than purely administrative or filing information — relative directly to Travelers rating of the doctor/appliant as to what category he will be placed in, and how the doctor applicant's malpractice insurance premium will be computed?

A. This is a form used nationally and some questions may only signify in other areas, e.g., see application questions 6 and 9 (type of venture, profession of applicant, location and days per week in practice). Administrative and filing information includes statistical coding information developed from, for example, specialties which may be used vis-a-vis future loss date data to more accurately classify and rate in the future. Much of the data may assist in current underwriting review to more clearly pinpoint the nature of the individual doctor's practice. Otherwise, yes.

Q. Could we run through the application to determine, where applicable, how Travelers intends to relate the requested information to its rating/categorizing system for premium charges, or for what purpose the question is asked. Relative to question 6 and 9, are these all for administrative data? Does the age of the physician bear on rating or category?

A. (See comment above regarding items 6 and 9) This information may assist in future rating as reflecting joint cumulative liability, or liability incurred on behalf of others; present ISO rates do reflect such assumptions, although Travelers rates do not. Age may affect rating, as it may bear on physical ability or mental acuity.

Q. (No. 10 Medical specialty) Is this question simply for assignment of the physician to a category?

A. Yes.

Q. (No. 11 Education) What about foreign medical graduates practicing in Arizona? Will hospital, internship or residency be graded re rating?

A. Depends only on ArMA review, Arizona licensing, but may be used in future for differential grading.

Q. (No. 12 Membership, licenses, and affilition data) Could you explain if any of these questions will relate to rating? Specifically, what about the doctor practicing a specialty who did not complete a residency or is not board eligble in that specialty?

A. ArMA association is required. Board specialties assist in current classification. Non board-certified practice is considered in other questions, such as No. 14-No. 19; and they are considered in total context to determine assignment to a rating group.

Q. (No. 13 Hospital staff privileges) Will a doctor possibly be graded on which hospitals he has staff privileges, e.g. teaching versus non-teaching hospitals? When you say "privileges reduced, restircted, preceptored or suspended" do you mean *only* as a disciplinary or formal staff committee limitation imposed for due cause?

A. Not at present. But it might bear in future if loss development and correlation indicates any significance. Regarding "privileges," yes, *formal* action is the significant factor.

Q. (No. 14 Services performed) Could you comment on the effect of any affirmative answers on rating or category where procedures checked constitute only a minority or an occasional part of a physician's practice? Specifically, could you explain the meaning and significance of an affirmative answer to "X-ray, diagnostic, conventional, or other?"

A. Current rate groups depend on some indicated procedures: "yes" or "no" with no percentage distinction. Such *percentages may* bear in future as they do *presently* with Lloyds of London. Gross misrepresentation could jeopardize coverage or insurability. Realtive to the X-ray question, primarily, at present, to rate for therapy and possibly in the future to differentiate further.

Q. (No. 15 Surgical procedures performed) Could you indicate "office surgery" procedures acceptable without rating or category change?

A. Lacerations and surface suturing, topical applications, simple fracture reduction, removal of superficial warts and tumors, hypos and injections.

Q. (No. 16 Plastic surgery procedures performed) Any comment? Specifically, what about cosmetic or plastic surgery procedure performed by non-plastic surgery specialists, e.g., urological surgeon or gynecological surgeon?

A. Included within current rating structure for those specialties; but may in future be useful in subclassifying. Should be defined.

Q. (No. 17 Practice of weight reduction control) What is the significance of an affirmative answer to the primary question and Sub-questions in this item?

A. Primarily for future precision in classification other than as to current legal strictures.

Q. (No. 18 Rendering of emergency room care, etc.) Would you explain the significance of an affirmative answer to the primary question and each sub-question?

A. Currently determines paid 'part-time" or "professional" rating category for differential. Staff requirement emergency services or "own patient" do not affect rating.

Q. (No. 19 Percentages of gross income from services) In light of the fact that the great majority of physicians do not keep records of "percentages of professional gross income" from the listed procedures, how can this question be answered?

A. At least estimate these *percentages* to develop possible future loss correlations, and more precise rating. "All other hospital surgery" covers areas not otherwise defined for rating precision and statistical purposes.

Q. (No. 20 Names of partners associates; extention of association; employment of phisicians; employment of applicant) The first part of this question can be easily answered. Could you comment on the significance of an affirmative answer to the balance of the question?

A. (See comment, second question, part A.)

Q. (No. 21 Number and types of employees) This seems self-explanatory except for "medical assistants." Could you define this term?

A. Correlates with "paramedics."

Q. (No. 22 Employment of physicians or surgeons and nurse practitioners) Could you explain the significance of an affirmative answer to "surgeons assistants" or "nurse practitioner" regarding a doctor's rating or category, and probable additional malpractice insurance premium charge for same?

A. For future statistical correlation. No present charge to employer for these categories by Travelers. Although ISO does. There are rates for these individuals personal coverage, when employed by an insured ArMA doctor.

Q. (No. 23 Pathologists and Radiologists — supervision of personnel other than own employees in X-ray lab or Pathology lab) Any comments?

A. Liability under or as a proprietor of the lab, etc. is excluded from coverage in the physicians policy and must be covered separately.

Q. (No. 24 Employment of temporary replacements) Any comments? Specifically, does the employment of a temporary physician replacement involve any rating or category change for the *employer* physician?

A. No, as to employer. Coverage is available to the individual, if he is a member of ArMA.

Q. (No. 25 Employment in military, state, federal or public entity) Could you explain the rating or category significance of an affirmative answer to either "military" or "state, federal, etc?"

A. None at present, unless answered by a *locum tenens* employee, where it may help classify for his own coverage.

Q. (No. 26 Involvement in private practice (less than full-time) Please explain rating, category, or insurance premium significance of being "in private practice less than full-time."

A. Not applicable at present; but is a continuing problem for some doctors who feel there should be a time/rating correlation, either as to exposure, or as to degree of proficiency for credits or debits to standard rates.

Q. (No. 27 Association with health care facility with bed and board accommodations, medical facility maintained by industrial firm. organization to provide volunteer professional service, blood bank or lab.) Could you explain the significance of affirmative answers? Specifically, does part-time, volunteer, professional service affect rating?

A. "Health Care facility, etc." proprietary exposure excluded. "Blood bank or lab, etc." proprietary exposure excluded. "Medical facility, etc." affects rating group. "Organization to provide volunteer, etc." does not affect — if doctor not paid and has own coverage and is not proprietor. Under policy coverage, doctor cannot contractually assume another's liability.

Q. (No. 28 Contract entered with firm, corporation, association, union or other legal entity or governmental agency, HMO) Could you explain the significance of affirmative answers?

A. (See previous answers regarding proprietary exclusions, contractual liability limitations.) Practice in an HMO is not itself differentiated rate-wise. If other coverage exists, policies may be mutually exclusive and should be co-ordinated.

Q. (No. 29 Outstanding arbitration agreements with patients) Could you explain this question specifically for Arizona doctors?

A. Not applicable at present, in Arizona but changes in law could affect. Information is desired for possible future rate consideration.

Q. (No. 30 Recent professional liability insurance carried, etc. Do you mean prior to Travelers, if in the ArMA program?

A. It is well to at least indicate, even if presently in Travelers.

Q. (No. 31, 32 Availability of liability insurance, etc.) Both these items are self-explanatory.

Q. (No. 33 Investigated by medical examiners, narcotics bureau or governmental agency) If the answer is affirmative, will the fact of "being investigated" affect a physician's rating or category, or will official due process action against a physician be required to affect rating, category or insurability?

A. Generally speaking, the latter is the case, but it is usually wise to also indicate exoneration from any serious inquiry, since government records are so often inaccurate, or remain in files erroneously.

Q. (No. 34 Claim for malpractice; physician, patient or insurance plan complaint of any kind with medical society, foundation or governmental unit.) If the answer is affirmative to the first part of this question, will the fact of having had "suit or alleged malpractice brought against the physician" or the fact of having had a "complaint of any other kind filed against physician," be sufficient to affect a physician's rating or category or insurability. Or will an adverse result or finding against the physician (settlement out of court, adverse court or jury verdict, adverse medical review board decision) be required to affect rating, category or insurability?

A. The fact of a filing in its own right, or a complaint, does not in itself necessarily warrant adverse action; nor does even an adverse result or finding. The effect depends on the total circumstances as available for the underwriting review. Therefore, full disclosure of all circumstances, records, data is vital to the doctor's interest. Incomplete records and vague information often dispose reviewers to the worst conclusions.

Q. (No. 35 Treatment for alcoholism, narcotics or mental illness) Please explain the affect of an affirmative answer on the physician's rating, category or insurability.

A. Obviously, it could bear on the doctor's competence: and, therefore, on insurability. The best safeguard is full disclosure, including evidence to contrary or rehab.

Q. (No. 36 Office premises liability insurance carrier) Please explain the purpose of this request.

A. Premises liability is included in the Travelers coverage, and should not be duplicated. This is to avoid lapses between so-called "slip and fall" cases and pure professional liability.

Q. Regarding "claim information" on the last page of the application, please explain for what purpose clinical questions are asked? Specifically, is there to be some judgmental review or evaluation of the physician's performance or the merit of the allegation of malpractice?

A. (See underwriting review procedures of the ArMA-Travelers Program.) Full disclosure of all circumstances is the best assurance of valid, fair rating and classification review.

Q. Concerning the final paragraph at the bottom the last page: "I furthermore certify that I understand the rates for professional liability coverage are higher than normal, but I desire coverage on this basis as I have been unable to obtain the coverage desired though the normal insurance market." Please explain if this is applicable to Arizona physicians, and must this statement be signed?

A. Not at present in Arizona. This is a national application, and Arizona Medical Association members do have availability or coverage through the normal market.

Conclusion:

For most Arizona physicians the anniversary date of their malpractice policy with Travelers is April 1st.

It was anticipated by the Board of Directors that many physicians — due to the astronomical increase this year in the cost of malpractice insurance under the ArMA — Travelers program — would find it very difficult to budget in their office overhead costs for this huge expenditure, especially while facing Federal and State income tax payments April 15 and June 15.

Therefore a final question was put to the representative of Travelers regarding payment options for the large premium amounts.

Their reply: (Quote) The only alternative to payment in full, or payment with 30 days of inception, is the Travelers Budget-Plan Agreement for financing. It requires a down payment, plus a non-refundable, pre-paid service charge. The balance of the premium is divided into 10 equal monthly installments with 6% net, simple interest. This financing in the Travelers has very strict time requirements but at higher interest rates. Any doctor can secure details of the finance plan from our office (unquote). — Burns-Harrelson—Burns, 5045 N. 12th St., P.O. Box 7040, Phoenix 85011, Phone 266-4411 or 266-4421 or Patzman-Allen-Lamb and Associates 5902 E. Pima, Tucson, Arizona 85712, 855-7375.

ArMA Medical History

ARIZONA MENTAL HEALTH IN TERRITORIAL DAYS

PART V — A MORE EUPHONIOUS NAME

EDITORIAL NOTE: THIS CONCLUDES A RATHER CAREFUL AND COMPLETE SUMMARY OF THE LEGISLATIVE ACTIVITY — OR LACK THEREOF AND THE BUILDING OF THE "INSANE ASYLUM." AGAIN OUR APPRECIATION IS EXPRESSED TO THE PALO VERDE FOUNDATION FOR MENTAL HEALTH, TUCSON. THIS SERIES ORIGINALLY APPEARED IN THEIR ARIZONA PSYCHIATRY JOURNAL 1970-73.

Sir: It becomes my duty as well as privilege to submit to you for consideration the Ninth Biennial Report showing the workings, improvements, acquisitions and expenditures of the institution committed to my care for the biennial period extendng from July 1, 1902 to June 30, 1904.

By legislative act of the General Assembly of 1902, the name of the institution was changed from the insane asylum of Arizona to the Territorial Asylum for the insane. A more euphonious if not a more appropriate name would have been, the Asylum of Arizona, or Hospital of Arizona, or Arizona Asylum. Even a name, in the public's eye, frequently robs a bedlam of many of its unplesant features.

Again I wish to point out the habit of sending a varied assortment of patients, other than imbeciles, that have no legitimate qualification entitling them to admission. I refer to persons not insane, in the strict sense of the word; those suffering from alcoholic poisoning, physical imbeciles, and lastly impoverished individuals, who are unable to earn a competency and who are transferred to the Asylum as a house of refuge, a home for the indigents. Were the question of ciizenship properly and carefully investigated there would be fewer patients and more transportations.

Some instances have occurred where patients out on parole have had a relapse, been taken up, brought to trial on the charge of lunacy and returned to the Asylum on a second commitment, at a considerable cost to the County from which committed. If the probate judge would ascertain something of the history of the party brought before him for trial, whether the accused had ever been committed to this institution, and if so, had he been legally discharged, or merely out on parole, much expense might be obviated. Patients paroled are not amenable to lunacy trial, but are returned to the Asylum at the expense of the party of parties in whose care the patient is paroled; otherwise the cost of returning falls upon the institution.

Were we to keep every person committed to the istitution in confinement until we were positive beyond the peradventure of doubt, that he was absolutely cured, or that the diseased symptoms of the brain would never again appear, then the

Asylum would be a lifelong abiding place and death alone would be the means of discharge.

A coincidence rather remarkable occurred during the first fiscal year of this period in the demise of the first two patients committed to an asylum from the Territory of Arizona.

OCCUPATION OF PATIENTS

	MALE	FEMALE	TOTAL
Carpenter	27	—	27
Cook	20	—	20
Farmer	50	—	50
Gambler	9	—	9
Laborer	203	4	107
Miner	122	—	122
Prostitute	—	17	17
Saloonist	5	—	5

Originally these were sent to Stockton, California. They died within a few days of each other. One of these, Mollie Monroe, or Mollie Sawyer, was quite a character in the pioneer days of the West. She was, perhaps, better known to more "Old Times" than any other woman in the Territory, while her caprices, mad acts and adventures on the frontier in the early sixties were realities that, to most of us, seem to have existence only in romance and fiction. She carried the proverbial six-shooter and was the wildest roisterer at many midnight escapades. She was the discoverer of the famous Castle Creek Hot Springs, of Arizona.

REPRINTED WITH PERMISSION OF THE PALO VERDE FOUNDATION FOR MENTAL HEALTH FROM ARIZONA PSYCHIATRY, "ARIZONA MENTAL HEALTH IN TERRITORIAL DAYS", Vol IV, No. 1 & 2, Pages 12-19.

ANNUAL MEETING HIGHLIGHTS

GOLF PRIZE WINNERS

LOW NET

W. Scott Chisholm M.D.
Benjamin Ventura, M.D.
Charles Kalil, M.D.
Bob Price, M.D.
John Green, M.D.
Lloyd Anderson, M.D.
James Giagobbe, M.D.
J. K. Kerr, M.D.
Richard Dexter, M.D.
T. W. Jenson, M.D.
L. B. Hanson, M.D.

LOW GROSS

William T. Evans, M.D.
Bob Hagan, M.D.
Stuart Holtzman, M.D.
Eldon Reed, M.D.
David Duncan, M.D.
Jack Zeluff, M.D.
Marvin Schneider, M.D.
S. I. Shapiro, M.D.
Darwin Zahn, M.D.
Max Wertz, M.D.

High — Ronald Christ, M.D.

LONGEST DRIVE - Jack Zeluff, M.D.
KP4 - Bob Price, M.D.
KP17 - Stuart Holtzman, M.D.
LONGEST PUTT - Lloyd Anderson, M.D.

Exhibitor Flight

Low Gross - Roman Mislicky
Low Net - Charles Thomas

WINNERS OF THE ARTS AND CRAFTS SHOW

Here are the winners of ribbons and plaques at the Arts and Crafts Show sponsored by the Woman's Auxiliary to the Arizona Medical Association at the convention held in Tucson in April 1975.

Many talented doctors and their spouses from all over the state entered their work, and a panel of expert judges chose the winners.

Oil Painting: 1st prize, "Landscape of Sedona Area" by Audrey Urry, M.D. 2nd prize, "Portrait of an Indian Child" by Dee Wrzesinski. Honorable Mention, "Among the Aspens" by Lore Holmes. Honorable Mention, Painting by Tanya Newman.

Acrylic: 1st prize, "Winter Fires" by Stuart Edelberg, M.D. 2nd prize, "Old Mill" by Carol Gardner. Hon. Men., "Bench Warmers" by Frances Anderson. Hon. Men., "Sun and Rocks" by Frances Anderson.

Watercolor: 1st, "Japanese Waterlily Leaves" by Audrey Urry, M.D. 2nd, Watercolor by Sheila Kanter. 3rd, "Abstract" by Lydia E. Gonzales. Hon. Men., "Evening Sails" by Judy Davis. Hon. Men., "Forest Landscape" by Aliene Austin.

Painting, Charcoal and Collage: 1st, Collage by Sheila Kanter. 2nd, Urethane on Foil by Stuart Edelberg, M.D. 3rd, "Wildflower" Pen and Ink by Sylvia DeFrietas. Hon. Men., "Tank and Ray Gun" by Jeff Corrigan.

Photography: 1st, "German Street Scene" by Donald Ewing, M.D. 2nd, print of X-Ray of Seed Pod by Andre Bruwer, M.D. 3rd, Photograph by Barbara A. Jarvis Hon. Men., Photograph by Barbara A. Jarvis. Hon. Men., "Escalante Canyon with Hiker" by Donald Ewing, M.D.

Scrimshaw, Sculpture and Jewelry: 1st, Turquoise Bracelet by H. Allan Collier, M.D. 2nd, Silversmithing Display by T. W. Jensen, M.D. 3rd, Scrimshaw Watchband by Robert Blake M.D. Hon. Men., "Wrestlers" by Robert J. Oliver, M.D. Hon. Men., "Nude" by Robert J Oliver, M.D.

Pottery: 1st, Chinese Water Jug by Marie Tapp. 2nd, Vase by Marie Tapp. 3rd, Tea Ceremonial Pieces by E. Allan Williford, M.D.

Stitchery: 1st, Western Embroidered Outfit by Joyce Newman. 2nd, Crewel Pillow by Evye Strong. 3rd, Crewel Picture by Evye Strong.

Needlepoint: 1st, "Kachina" by Paula Drach. 2nd, "Matisse Adaptation" by Beverly Miller. 3rd, "Train Engine" by Joan Tedford. Hon. Men., "Indian Squaw" by Paula Drach.

Needlecraft: 1st, Weaving and Macrame Wall Hanging by Jean Demlow. 2nd, Crocheted Wall Hanging by Jean Demlow. 3rd, Rya Swedish Rug by Grace S. Delph. Hon. Men., Japanese Lantern Single Pot by Jackie Williford. Hon. Men., Quilted Wall Hanging by Jean Demlow. Hon. Men. Appliqued Quilt — "Mohawk Trail" by Rose Finn. Hon. Men., Needleweaving by Joan Tedford. Hon. Men., Spanish Pointed Bobbin Lace by Mary Carreras.

Crafts: 1st, Pouting Chair by Ruth Ann Jackson. 2nd, "Rooster" by Philip Fleishman, M.D. 3rd, Coiled Basket by Lisa Mallon.

The Grand Prize in Art was awarded by the judges to Donald Ewing, M.D. for his photograph "German Street Scene". The Grand Prize in Crafts went to Jean Demlow for her Weaving and Macrame Wall Hanging.

The largest number of votes for the most popular entry went to Sylvia deFrietas for her Wildflower Poster.

A special award for "the most potential" was given by the judges to Jeff Corrigan for "Tank and Ray Gun" done in wet chalk on the back of oil cloth.

Max H. Parrott, M.D., President-Elect, AMA

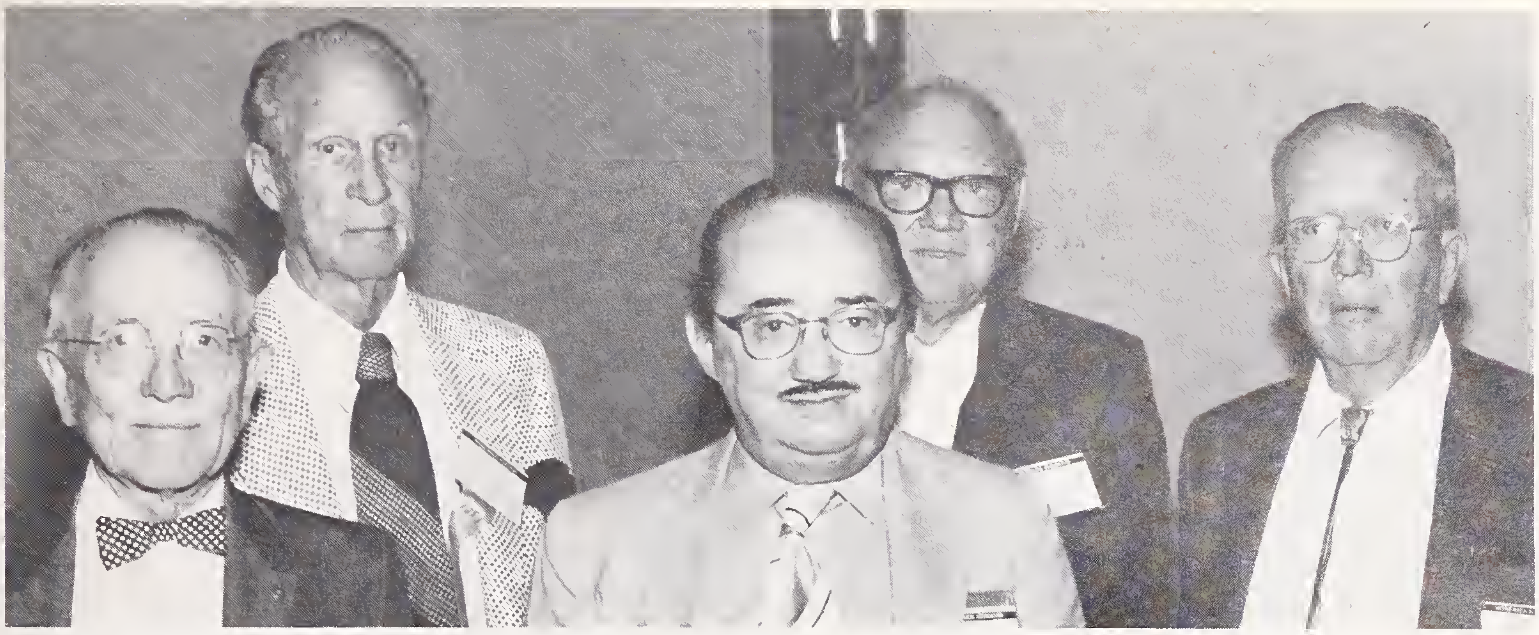
"The Great Debate" — Panel Discussion

Mrs. John J. Standifer presents Neal Vanselow, M.D. Dean with the AMAERF Contribution

James L. Parson, M.D., Tucson

The new Presidents

ANNUAL MEETING HILIGHTS



Incorporating Board of Directors 25 years later: (Back L-R) Drs.: Harry E. Thompson; Herbert B. Potthoff; Clarence E. Yount, Jr.; (Front L-R); Drs. Walter Brazie; and Abe I. Podolsky.

Year Club" awards were presented to Walter M.D. and Harold W. Kohl, Sr., M.D. (Not Present).

William C. Scott, M.D., President addresses the House of Delegates.

Mrs. Lee Rice, Western Regional V.P., Woman's Auxiliary to the AMA

Edward Jacobson honored as counsel for ArMA's Incorporation.

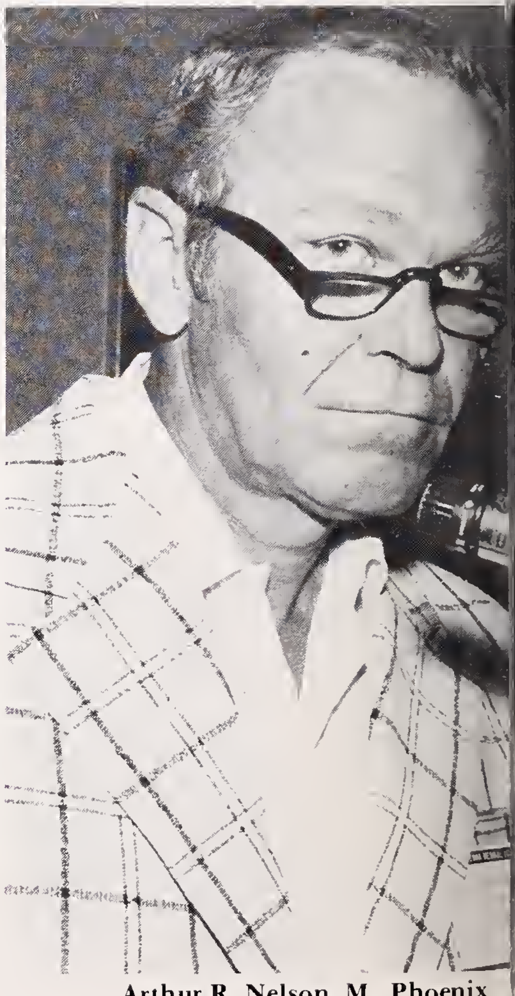
Dr. Scott and Dan Capps, Administrator Arizona Medical Center

Dr. Payne receives his Past-President Plaque

Mr. John J. Standifer, AMAERF

Scientific Sessions

Dr. and Mrs. William G. Payne, and William C. Scott, M.D.



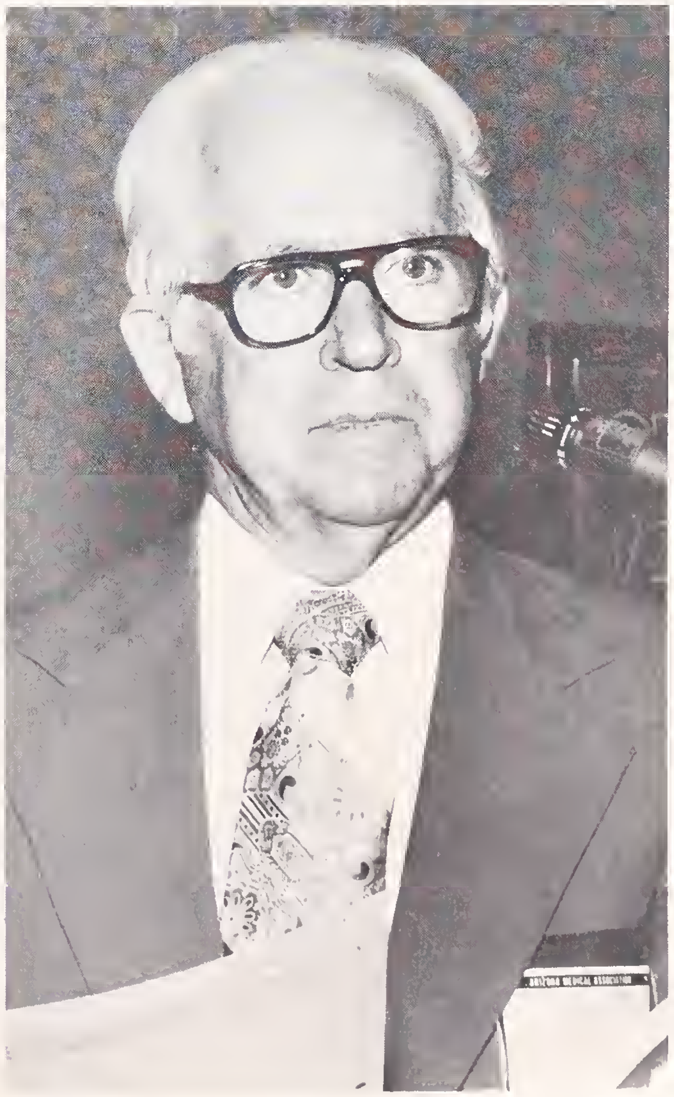
Arthur R. Nelson, M., Phoenix

Woman's Auxiliary Luncheon

Mrs. Howard Kimball, President Woman's Auxiliary to ArMA

Dr. Parrott and Dr. Scott

Scott Presents Dr. Dysterheft the A.H.Robins Community Service Award


Robert Price, M.D., Phoenix Speaker of the House

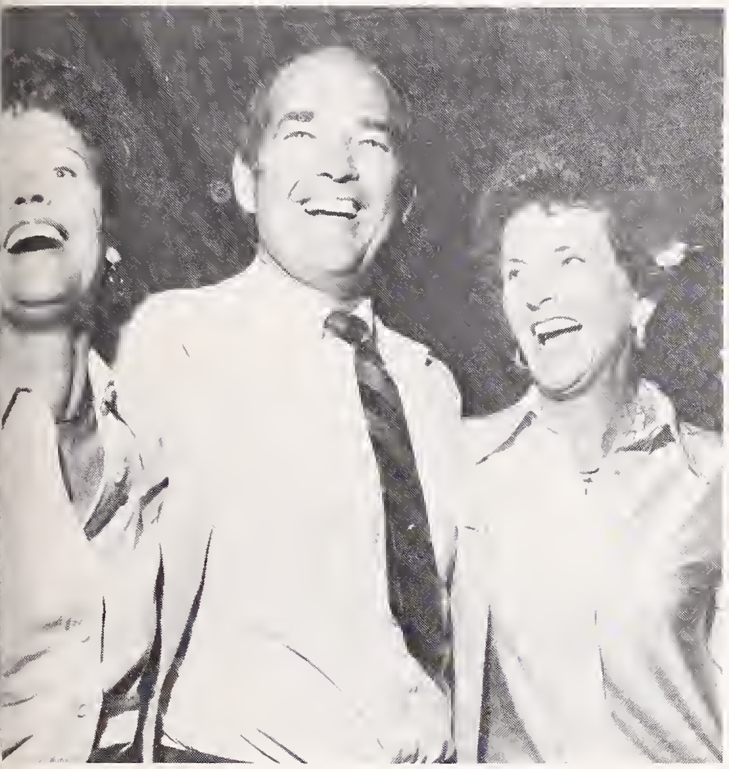
Don Diego de la Scott, (Zorro) and The Hole in the Wall Gang

Mrs. Raymond Vaaler, Past-President Woman's Auxiliary to ArMA

The Commercial Exhibits

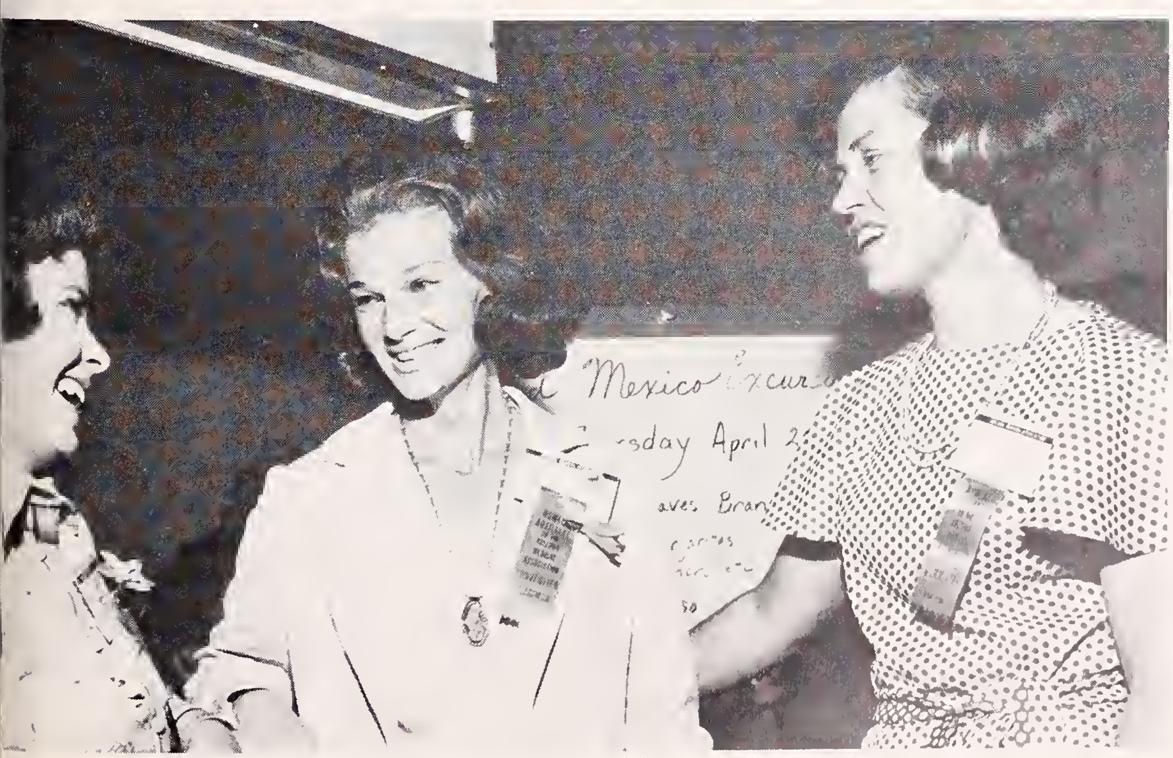
"And there was music"

st President of ArMA: (Seated L-R) Drs: Clarence E. Yount, Jr., Harold W. Kohl, Sr.; William G. Payne; William B. Steen; rry E. Thompson, (Standing L-R) Charles S. Smith; Robert E. Hastings; John J. Standifer; Arnold H. Dysterheft; Arthur V. dley; and Dermont W. Melick.



William E. Crisp, M.D. and lovely ladies

Dr. Payne views exhibits



Woman Auxiliary members chat with Mrs. Lawrence Hass, (center), Woman's Auxiliary Convention Chairman

THE ARIZONA MEDICAL ASSOCIATION, INC. RESUME

OF THE HOUSE OF DELEGATES 1975 ANNUAL MEETING, APRIL 26

Adjourned meeting of the House of Delegates of the Arizona Medical Association, Inc. held in the Ball Room of the Braniff Place Hotel, Tucson, Arizona, Saturday April 26, 1975 convened at 8:16 a.m., Robert A. Price, M.D., Speaker of the House, presiding.

CREDENTIALS

The Credentials Committee reported a quorum present and House duly constituted.

ROLL CALL

On the roll call 107 Delegates (and/or Alternates) and 24 members of the Board of Directors were present.

MINUTES

Minutes of the meeting of the House of Delegates held April 27, 1974 were approved without reading.

ELECTION OF OFFICERS

The following officers were elected for a term of one year.

President-Elect	Edward Sattenspiel, M.D.
Vice President	John F. Kahle, M.D.
Secretary	William E. Crisp, M.D.
Treasurer	Richard L. Dexter, M.D.
Speaker of the House	Robert A. Price, M.D.
Editor-In-Chief	John W. Kennedy, M.D.

The following were elected for the balance of term January 1, 1974 to December 31, 1975.

Delegate to AMA	W. Scott Chisholm, M.D.
Alternate Delegate to AMA	Patrick P. Moraca, M.D.

The following were elected for the term January 1, 1976 to December 31, 1977.

Delegate to AMA	W. Scott Chisholm, M.D.
Delegate to AMA	Richard O. Flynn, M.D.
Alternate Delegate to AMA	Bruce N. Curtis, M.D.
Alternate Delegate to AMA	Patrick P. Moraca, M.D.

ELECTION OF DISTRICT DIRECTORS

The following District Directors were elected.

Central District Director	Reginald J. M. Zeluff, M.D. (1973-1976
Central District Director	Wallace A. Reed, M.D. (1975-1978)
Central District Director	Lawrence J. Shapiro, M.D. (1975-1978)
Northeastern District Director	Jack I. Mowrey, M.D. (1975-1978)
Northwestern District Director	Richard T. McDonald, M.D. (1973-1976
Southeastern District Director	Edward R. Curtis, M.D. (1974-1977)
Southern District Director	Vernor F. Lovett, M.D. (1975-1978)

REFERENCE COMMITTEE ON RESOLUTIONS

Report of the Reference Committee on Resolutions as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

Subject: BAN ON SMOKING IN THE HOUSE OF DELEGATES

WHEREAS, The American Cancer Society has decided that smoking is detrimental to one's health and may be a direct cause of cancer of the lungs and the upper respiratory system; and

WHEREAS, The American Heart Association has gone on record condemning the smoking of cigarettes as a contributing cause of heart and lung diseases; and

WHEREAS, Many people are extremely sensitive to smoke of cigarettes, pipes and cigars; therefore be it

RESOLVED, That the Arizona Medical Association ban smoking in the House of Delegates.

ADOPTED, AS AMENDED, APRIL 26, 1975

Resolution Number 2-75

Subject: 1976 CALENDAR YEAR BUDET OF INCOME AND EXPENSE

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1976 be adopted:

	INCOME	EXPENDITURES	CONTINGENCY
General Operations	$422,550.00	$310,400.00	$112,150.00
Committee Operations	- 0 -	57,800.00	(57,800.00)
Annual Meeting	54,000.00	53,400.00	600.00
Publishing Operations	52,300.00	69,700.00	(17,400.00)
Building Operations	17,750.00	40,000.00	(22,250.00)
Benevolent & Loan Operations	4,500.00	2,000.00	2,500.00
	$551,100.00	$533,300.00	$ 17,800.00

and be it further

RESOLVED, That the annual dues of the Arizona Medical Association, Inc. be $180 for Active members, with $170 going to General Operations Budget and $10 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Service member dues be $45, with $35 going to the General Operations Budget and $10 going to the Publishing Operations Budget; and be it further

RESOLVED, That the Intern or Resident Active member dues be $18, with $8 going to the General Operations Budget and $10 going to the Publishing Operations Budget.

ADOPTED, APRIL 26, 1975

Substitute Resolution 3-75
Subject: PROFESSIONAL LIABILITY INSURANCE

WHEREAS, The professional liability insurance crisis is one of the most important issues to face medicine and the public in recent years; and

WHEREAS, It is necessary to protect, promote and continue to provide quality health care to our patients at a reasonable cost; and

WHEREAS, It is the purpose of this society to provide quality medical care at a reasonable expense to our patients and that this purpose can now only be accomplished by prompt and continuing action of our State Legislature, which action is expressly requested by this resolution; and

WHEREAS, The Arizona Medical Association has considered the present pending legislation in Arizona and the recently enacted Indiana law, House Bill 1460, as well as legislation passed in other states; therefore be it

RESOLVED, That the Arizona Medical Association recommends the following plan of action:

I. For immediate action.
  A. Urge Passage of reasonable informed consent legislation.
  B. Urge passage of House Bill 2419 with the following modifications:
    (1) That all malpractice suits shall be mandatorily heard before an appropriately constituted medical-legal panel.
    (2) That the Statute of Limitations be further modified to limit filing within two years of date of alleged act, except that a minor under the full age of six years shall have until his eighth birthday in which to file. This applies to all persons regardless of minority or other legal disability.
2. Realizing that the above two bills are only partial solutions, request that the Arizona State Legislature at the earliest possible time enact legislation including but not limited to the following points embodied in Indiana House Bill 1460:
  A. Provide a guarantee of fiscal responsibility for health care providers.
  B. Provide for a catastrophic injury fund.
  C. Provide that cost of administration shall be funded by fixed assessments collected from certain health care providers.
  D. Provide for a method of reporting to an appropriate board the actions of those individuals against whom a settlement is made or a judgment rendered, for review of the fitness of these health care providers to practice their profession.
  E. Provide for formation of a professional liability commission given the authority to gather the necessary information to study the problems and possible implementation of the long-term goals of this resolution.
  F. Regulate costs of professional liability actions so that an appropriate portion of any settlement shall benefit the injured party.
3. Long-term goal would be the establishment of a limitation of medical liability.
4. Any proposed legislation should include further recommendations deemed pertinent by the Board of Directors of the Arizona Medical Association.

SUBSTITUTE RESOLUTION ADOPTED,
AS AMENDED, APRIL 26, 1975

Resolution 3-75
Subject: LIMIT FOR MEDICAL LIABILITY LAWSUITS

NOT ADOPTED
REFER TO SUBSTITUTE RESOLUTION 3-75
AS AMENDED
APRIL 26,1975

Resolution 4-75
Subject: SECTION FOR COLLECTIVE BARGAINING AND POLITICAL AND ECONOMIC REPRESENTATION

WHEREAS, National and State governments are becoming controllers of health care practices and costs; and

WHEREAS, The physicians of Arizona and the United States are placed increasingly in the position of being dictated to rather than listened to as regards these policies; and

WHEREAS, Collective action is our only reasonable recourse to governmental direction and restriction; therefore be it

RESOLVED, That the Arizona Medical Associaton designate or create a section for collective bargaining and political and economic representation; and be it further and economic representation; and be it further

RESOLVED, That the Arizona Medical Association approach each member for the legal right to collectively bargain for him; and be it further

RESOLVED, That the Arizona Medical Association's delegates to the American Medical Association House of Delegates introduce a like resolution in that body at their next session.

REFERRED TO MEDICAL ECONOMICS COMMITTEE
FOR STUDY AND RECOMMENDATION TO THE
BOARD OF DIRECTORS WITHIN SIX MONTHS,
THE BOARD OF DIRECTORS THEN TO REPORT
THEIR CONCLUSIONS TO THE GENERAL
MEMBERSHIP.
APRIL 26,1975

Resolution 5-75
Subject: OPTIONAL AMERICAN MEDICAL ASSOCIATION MEMBERSHIP

REFERRED TO REFERENCE COMMITTEE ON
AMENDMENTS
APRIL 26,1975

Resolution 6-75
Subject: CHIROPRACTIC

WHEREAS, A physician should practice a method of healing founded on a scientific basis and he should not participate voluntarily with anyone who violates this principle; and

WHEREAS, It is the position of this profession that Chiropractic is an unscientific cult whose practitioners lack the necessary training and background to diagnose and treat human disease appropriately; and

WHEREAS, Other nationally prominent organizations, not affiliated with medicine have made similar statements that

Chiropractic constitutes a major health hazard — for example the AFL-CIO, Consumer Federation of America and National Council of Senior Citizens; and

WHEREAS, The National Association of Letter Carriers included Chiropractic within the "Medical Care Benefits" of their contract in 1960 but decided in 1965 to exclude this coverage; therefore be it

RESOLVED, That submitting of x-ray films or other medical records to a chiropractor or to a patient known to be conveying such to a chiropractor unless required by law constitutes a tacit endorsement of Chiropractic as a legitimate healing art and thus is considered an unethical act.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, APRIL 26, 1975

Resolution 7-75

Subject: THE AMERICAN INDIAN MEDICAL SCHOOL

WHEREAS, The Navajo Health Authority, representing the Navajo Nation, with guidance and support from many medical facilities, is now engaged in planning an early implementation of a school devoted to health sciences education for American Indian students; and

WHEREAS, The University of Arizona has exhibited an interest in such a health sciences school, as evidenced by membership of the president of the University of Arizona on a commission charged with an over-view responsibiliy and evaluation of such an endeavor; and

WHEREAS, The Flagstaff Community uniquely fits the parameters laid down by the Navajo Health Authority as the site of the first American Indian Medical facility mainly because of the existence of Northern Arizona University; and

WHEREAS, The initial planning is far advanced with a specific date now identified for the opening for such a health sciences school; and

WHEREAS, The Arizona Medical Association, through its committee on medical education, recognizes the unusual opportunities this health sciences facility will provide to all American Indians throughout the United States of America; and

WHEREAS, The prime concern of the Arizona Medical Association emphasizes endeavors pointed toward the improvement of the quality of medical care to all its citizens in every geographical location in the state of Arizona; and

WHEREAS, The objectives and goals of the Navajo Health Authority and the Arizona Medical Association are mutually compatible; therefore be it

RESOLVED, That the Arizona Medical Association endorse and support the establishment of a health sciences institution in Arizona for the above purposes.

REFERRED TO MEDICAL EDUCATION COMMITTEE FOR STUDY AND RECOMMENDATION TO THE BOARD OF DIRECTORS,
APRIL 26,1975

Resolution 8-75

Subject: UNIFIED MEMBERSHIP

REFERRED TO REFERENCE COMMITTEE ON AMENDMENTS
APRIL 26,1975

Resolution 9-75

Subject: POLICY ON RELATION TO GOVERNMENT AND THIRD PARTY CONTRACTS

WHEREAS, In 1974 the Arizona Medical Association went on record as favoring repeal of the PSRO law; and

WHEREAS, Many physicians feel this program will lower quality, increase costs and ration medical services; and

WHEREAS, These may be obligatory requirements of governmental medical systems but we do not feel the medical profession should be implementors of these requirements; therefore be it

RESOLVED, That any individual physician may participate fully in any PSRO, but the Arizona Medical Association affirms its encouragement to its members to exercise their option not to particapate in PSRO, and be it further

RESOLVED, That should the hospital contract with governmental programs require it to accept this review, that voluntary physicians be hired at government expense to do this cost control function, and be it further

RESOLVED, That the Arizona Hospital Association and the Arizona Department of Health Services be informed of this resolution.

SUBSTITUTE RESOLUTION, ADOPTED, APRIL 26, 1975

Resolution 10-75

Subject: PUBLIC LAW 93-641 — NATIONAL HEALTH PLANNING AND RESOURCES DEVELOPMENT ACT OF 1974

WHEREAS, The Governor of the State of Arizona now has under consideration Public Law 93-641 (the National Health Planning and Resources Development Act of 1974); and

WHEREAS, PL 93-641 stipulates that the Governor must make a designation of (a) a one-state health service area or (b) multiple health service areas; and

WHEREAS, The designation of one statewide health service area as compared to two or more areas contributes the most to providing conditions necessary for planning, implementation and evaluation of health resources and services to all the people of the State of Arizona; and

WHEREAS, There is a high probability that a division of Arizona into two or more health service areas may lead to conditions and results extremely advantageous to some residents, but that the counter-balancing disadvantages to other residents are so great as to far outweight the advantages; therefore be it

RESOLVED, That the Arizona Medical Association, recognizing that we are a nation and a people of laws, and recognizing that Public Law 93-641 now exists as a legal and binding statute until such time as legality and constitutionality can be traditionally determined, does hereby record its support for the designation of the State of Arizona as a single and whole health service area embracing all of the State of Arizona as a legal entity for purposes of sustaining existing statewide health service programs, and establishing future mandated health service programs for all of the people of Arizona; and be it

RESOLVED, That this resolution be forwarded to Governor Raul Castro immediately asking that he give this resolution due consideration in his decision for designation of one health service area for the State of Arizona.

POSTPONED, APRIL 26, 1975

Resolution 11-75

Subject: PUBLIC LAW 93-641 — NATIONAL HEALTH PLANNING RESOURCES DEVELOPMENT ACT OF 1974

WHEREAS, The Arizona Medical Association, on thorough review of Public Law 93-641 — known as the National

Health Planning and Resources Development Act of 1974 — has concluded that this act is a possibly illegal and or unconstitutional assumption by the Federal Government of all power, control, rights and prerogatives from existent municipal, county and state governments in the United States of America of all health services to the people; and

WHEREAS, Public Law 93-641 does in effect and in fact disfranchise the people of Arizona of any elective control of health standards, health policy, health services and health funding within the state by vesting control of all health matters in federally designated areas and agencies not legally or statutorily responsive to the elected representatives of the people through their state legislative or executive departments; and

WHEREAS, The Arizona Medical Association does condemn and oppose the unprecedented, unwarranted and illegal seizure by the Federal Government through Public Law 93-641 of all control of health services standards, policy, administration and funding from the duly and legally elected public officials of local, county and state governments in Arizona; and

WHEREAS, The Arizona Medical Association expresses grave and immediate concern that Public Law 93-641 could well jeopardize the orderly and *continuing* fiscal responsibility for *existing* health services and patient care programs so essential to many citizens of Arizona; and

WHEREAS, The Arizona Medicl Association is especially concerned when — at a time of economic stress and public revenue shortage — the Federal Government, through Public Law 93-641 (Section 1521 (d)), specifically assumes the power to terminate "any allotment, grant, loan or loan guarantee," — "or support of health resources in such a state until such a time as such an agreement is in effect"; and

WHEREAS, The Arizona Medical Association is alarmed and concerned that Public Law 93-641 clearly gives the Federal Government the power to compel the State of Arizona to conceive and implement *new* health service programs for which there is neither actual or statutorily allowable funding available, under penalty of termination of that federal portion of funding for existing essential public health services to the patient-citizens of Arizona; and

WHEREAS, The Arizona Medical Association does identify and warn the people and elected officials of Arizona of the massive distruptive economic effect inherent in the transfer of fiscal control of more than one billion dollars of health care expenditures within the State of Arizona from the existent health services industry in Arizona to the Federal Department of Health, Education and Welfare; and

WHEREAS, The Arizona Medical Association does condemn the unilateral and mandatory termination of all local and voluntary consumer/provider control of health services as mandated in Public Law 93-641 by the Federal Government; and

WHEREAS, Contrary to the stated intent of the Law, it does in fact insure a predictable and unavoidable decline in the quality of health services and patient care to the people of Arizona by its clear and onerous intent to vest all ultimate authority in matters of health care and services in a distant and absentee master or overseer in the person of the Secretary of the Department of Health, Education and Welfare; and

WHEREAS, Such a distant or absentee master or overseer of health services cannot possibly be appropriately and promptly responsive to, cognizant of, and identifiable with the specific and unique health and medical needs of the people and locales of the State of Arizona; and

WHEREAS, The Arizona Medical Association does convey with all possible gravity this warning — to the people, to all local and state governmental officials and to those who hold individual liberty and freedom of choice to be pre-eminent in our society — that Public Law 93-641 does legalize a system of agencies and controls by the Federal Government over all health services in America; which system can readily, leagally and expeditiously be legislatively adapted and applied to all personal, social and human needs, such as Educational Services, Food Services, Housing Services, Transportation Services, Police Protection, and legal Services; and

WHEREAS, The perversion in the name of "goodness" of our laws and our system of government — protecting the individual from the excesses and tyranny of the whole — to the philosophy that noble purpose warrants less than noble means will assuredly in due time permit each citizen in this nation his or her turn to yield up his or her personal rights on the alter of national "good" and expediency; therefore be it

RESOLVED, That the Arizona Medical Association, in concert with all like-minded local and state and national medical and health service organizations, all like-minded citizens and organizations of this nation — does hereby commit and dedicate itself by all proper and legal means to seek and achieve the following:

1. Permanent enjoinment of the Federal Government against implementation of any and all provisions of Public Law 93-641.
2. Final and affirmative judicial determination — if necessary, through the highest federal courts of this land — that Public Law 93-641 may be an illegal and or unconstitutional act.
3. Establishment in law the principle of ultimate local and state control over health services to the people; and be it further

RESOLVED, That the Arizona Medical Association vigorously support the American Medical Association in its current efforts to pursue these aims; and be it further

RESOLVED, That the Arizona Medical Association forthwith petition the executive body of the American Medical Association to urgently convene an ad hoc council of physician representatives from metropolitan county medical societies, state medical associations and legitimate national medical associations for the purpose of accurately determining the resolution and will of individual physicians and organized medicine in relation to Public Law 93-641.

SUBSTITUTE RESOLUTION ADOPTED,
AS AMENDED, APRIL 26, 1975

Resolution 12-75

Subject: PUBLIC LAW 93-641 — NATIONAL HEALTH PLANNING RESOURCES DEVELOPMENT ACT OF 1974

NOT ADOPTED
REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL 26,1975

Resolution 13-75

Subject: TERMINATION OF ALL CONTROL OF STANDARDS, POLICY, ADMINISTRATION AND FUNDING OF HEALTH SERVICES BY LOCAL, COUNTY AND STATE ELECTED OFFICIALS UNDER PUBLIC LAW 93-641.

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL 26, 1975

Resolution 14-75

Subject: LEGALITY OR CONSTITUTIONALITY OF PUBLIC LAW 93-641

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL 26, 1975

Resolution 15-75

Subject: FISCAL RESPONSIBILITY AND PUBLIC LAW 93-641

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL 26, 1975

Resolution 16-75

Subject: TERMINATION OF ALL LOCAL AND VOLUNTARY CONSUMER PROVIDER CONTROL IN HEALTH SERVICES UNDER PUBLIC LAW 93-641

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL 26, 1975

Resolution 17-75

Subject: QUALITY OF HEALTH SERVICES UNDER PUBLIC LAW 93-641

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL ,26,1975

Resolution 18-75

Subject: PUBLIC LAW 93-641 AS THE LEGISLATIVE MODEL OR PROTOTYPE FOR FEDERALLY CONTROLLED EDUCATIONAL SERVICE AREAS, FOOD SERVICE AREAS, HOUSING SERVICE AREAS, POLICE SERVICE AREAS, TRANSPORTATION SERVICE AREAS AND LEGAL SERVICE AREAS

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 11-75
ADOPTED AS AMENDED, APRIL ,26, 1975

Resolution 19-75

Subject: UTILIZATION REVIEW COMMITTEE PLAN

WHEREAS, The Utilization Review Committee plans (as outlined in the Federal Register, Volume 39 Number 231 Part II dated November 29, 1974 of Public Law 93-603) interfere with doctor-patient relationships; and

WHEREAS, The American Medical Association was successful in its action against the Department of Health, Education and Welfare regarding pre-admission certification; and

WHEREAS, The Utilization Review Committee Plan is an implementation of pre-admission certification; and

WHEREAS, The Plan is primarily a cost containment program with little or no regard for quality or individualization of care; and

WHEREAS, The American Medical Association has now challenged the Secretary of the Department of Health, Education and Welfare as possibly exceeding his authority under the Social Security Act; therefore be it

RESOLVED, The Arizona Medical Association strongly endorses the American Medical Association's current program of litigation in reference to the Utilization Review Committee Plan; and be it further

RESOLVED, That the Arizona Medical Association advise its component county medical societies and each medical staff of the several hospitals in the State of Arizona to not accept or participate in Utilization Review Committee plans; and be it further

RESOLVED, That should the hospital contract with governmental programs require it to accept this review, that non-staff physicians be hired at government expense to do this cost control function; and be it further

RESOLVED, That the Arizona Medical Association will hold the government and its hired fiscal reviewers legally responsible for any poor outcome resultant from denial of benefits or rationing of services

SUBSTITUTE RESOLUTION ADOPTED,
AS AMENDED, APRIL 26, 1975

Resolution 20-75

Subject: THREE OR MORE HEALTH SERVICE AREAS FOR STATE UNDER PUBLIC LAW 93-641

WHEREAS, Public Law 93-641 is now the Law of the Land and must be lived with whether we like it or not until repealed; and

WHEREAS, HSA's (Health Service Areas) will be the functioning units of the law; and

WHEREAS, The doctor input will be severely restircted according to the formula prescribed in the law; and

WHEREAS, It would be wise to increase the doctor input as much as possible in the State of Arizona and thereby enhance local control; and

WHEREAS, It has been amply demonstrated that the local planning agencies have been most effective in their recognition of local problems and have mobilized the local area citizenry of all walks of life to become involved in area planning activities; there be it

RESOLVED, That the Arizona Medical Association petition the Governor of Arizona to recommend three or more HSA's for our State, requesting a waiver or waivers under the law if necessary; and be it further

RESOLVED, That if three HSA's are recommended they consist of a SOUTHERN HSA (Yuma, Pima, Santa Cruz and Cochise Counties — population 571,000 — center at Tucson), a CENTRAL HSA (Maricopa County — population 1,126,00 — Center at Phoenix), and a NORTH and EASTERN HSA (Mohave, Yavapai, Coconino, Gila, Navajo, Apache, Greenlee, Graham and Pinal Counties — opopulation 375,000 — center at Flagstaff); and be it futher

RESOLVED, That if four HSA's are recommended they follow the guidelines as outlined by Mr. William Mack, Deputy Director, Arizona Department of Health Services.

POSTPONED, APRIL 26, 1975

Resolution 21-75

Subject: PSRO

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 9-75,
APRIL 26, 1975

Resolution 22-75

Subject: MALPRACTICE INSURANCE

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION, 3-75,
ADOPTED, AS AMENDED APRIL 26, 1975

Resolution 23-75

Subject: MALPRACTICE INSURANCE

NOT ADOPTED

REFER TO SUBSTITUTE RESOLUTION 3-75, ADOPTED, AS AMENDED

Resolution 24-75

Subject: PROFESSIONAL LIABILITY INSURANCE — ESTABLISHMENT OF A COMMITTEE

WHEREAS, It is necessary to create public and legislative awareness of the effect of soaring professional liability insurance premiums on hospital and other medical cost and of the health peril created by the professional liability insurance situation; therefore be it

RESOLVED, That the Arizona Medical Association establish an ad hoc committee to inform the public, physicians, the Arizona legislature and other affected parties as to the crisis that now exists and which threatens our ability to continue to deliver quality health care; and be it further

RESOLVED, That the Arizona Medical Association assess its members to establish a fund to finance the aforementioned committee, such assessment to be apportioned among the members of the Association in the amount of $100 each.

ADOPTED, AS AMENDED, APRIL 26, 1975

Resolution 25-75

Subject: ARIZONA MEDICAL ASSOCIATION TAKING NO POSITION ON THE DIVISION OF THE STATE OF ARIZONA INTO HEALTH SERVICE AREAS

WHEREAS, The Public Law 93-641 mandates the division of the United States into Health Service Areas; and

WHEREAS, Public Law 93-641 mandates Federal control of all Health Service Areas; and

WHEREAS, Public Law 93-641 establishes conditions within the health care delivery system of Arizona that directly threaten the quality of care, the fiscal responsibility for, and elective participation by the people of Arizona in that health care delivery system; and

WHEREAS, The question of division of the State of Arizona into Health Service Areas has been and is divisive of and weakening to the position of Arizona physicians in opposition to Public Law 93-641; and

WHEREAS, It is inconsistent for the Arizona Medical Association formally in resolution to oppose Public Law 93-641, and then to give its official sanction to a plan of division of Arizona into one or more Health Service Areas; therefore be it

RESOLVED, That the Arizona Medical Association take no position on the question of dividing the State of Arizona into Health Service Areas.

POSTPONED, APRIL 26, 1975

Resolution 26-75

Subject: DISTRIBUTION OF OFFICIAL ACTIONS TAKEN BY THE ARIZONA MEDICAL ASSOCIATION IN REALTION TO PUBLIC LAW 93-641

RESOLVED, That the Board of Directors of the Arizona Medical Association is hereby instructed by the House of Delegates to distribute to the following list as expeditiously as possible all actions taken in the 1975 House of Delegates in reference to Public Law 93-641, with appropriate and explanatory cover letters and abridgments as determined by the Arizona Medical Association Board of Directors, to:

1. All State Legislators in Arizona.
2. The Governor, Attorney General and other elected state officials.
3. President of the American Medical Association and all members of its Board of Trustees.
4. Presidents of all state medical associations within the U.S.A.
5. President and Executive Secretary of the Arizona Hospital Association.
6. President and Executive Secretary of the American Hospital Association.
7. President and Executive Secretary of the Arizona Dental Association.
8. President and Executive Secretary of the Arizona Osteopathic Medical Association.
9. President and Executive Secretary of the Arizona Pharmaceutical Association.
10. Boards of Supervisors of the fourteen counties of Arizona.
11. Members of all comprehensive health planning councils within Arizona.
12. Members of the health insurance industry within Arizona.
13. All daily and weekly newspapers in Arizona — direct to editors.
14. All television stations in Arizona — direct to news editors.

ADOPTED, AS AMENDED, APRIL 26, 1975

REFERENCE COMMITTEE ON AMENDMENTS

Report of the Reference Committee on Amendments as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

Resolution A-1-75

Subject: PHYSICIAN REHABILITATION COMMITTEE

Chapter VII — Standing and Special Committees, Section 1 — Composition and Duties of Standing Committees

RESOLVED, That Chapter VII, Section 4 be amended by adding:

(M) PHYSICIAN REHABILITATION: — THIS COMMITTEE SHALL CONSIST OF THE CHAIRMAN AND AT LEAST SEVEN MEMBERS WITH DUE CONSIDERATION TO GEOGRAPHIC DISTRIBUTION AND SPECIALTY REPRESENTATION.

THE COMMITTEE SHALL BE FOR THE PURPOSE OF ASSISTING PHYSICIANS WHO HAVE PHYSICAL OR EMOTIONAL PROBLEMS WHICH MAY BE AFFECTING OR IMPAIRING THEIR PROFICIENCY IN THE PRACTICE AND THE QUALITY OF THEIR MEDICAL OR SURGICAL ACTIVITIES. THE COMMITTEE SHALL DEAL WITH EACH CASE AND FOLLOW-UP AS APPROPRIATE.

ADOPTED, APRIL 26, 1975

Resolution A-2-75

Subject: MEDICAL ECONOMICS COMMITTEE AND OCCUPATIONAL HEALTH COMMITTEE

Chapter VII — Standing and Special Committees, Section 1 — Composition and Duties of Standing Committees

RESOLVED, That Chapter VII, Section 1 be amended to read:

(j) Medical Economics: — This committee shall consist of a chairman and at least six members appointed on a geographic basis and with due consideration of the specialties and general practice. This committee shall deal with matters affecting the economic status of doctors of medicine. Sections will be set up within the committee and these may be enlarged as necessary. The purview of this committee shall include:

(1) Governmental Contracts; *(except those matters dealing with workmen's compensation)*

(2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;

(3) Organized Welfare and Charity Work:

(4) Retirement and Investments, including Group Investments for members.

(1) Occupational Health: — This committee shall consist of a chairman and at least five members appointed on a geographic basis and with due consideration for the specialties and family practice. The committee shall represent the Association on all questions realting to medical *(and economic)* relations under workmen's compensation. It shall also concern itself with improvement in industrial safety and the maintenance of good industrial health (rehabilitation) practices.

ADOPTED, APRIL 26, 1975

Resolution A-3-75

Subject: SOLICITATION FOR OFFICE

Chapter V — Election of Officers and Members of the Board, Section 6 — Solicitation

RESOLVED, That Chapter V, Section 6 be amended by deletion:

(Section 6. Solicitation: — Any person known to have sought for himself any office within the gift of this Association, shall be ineligible for any office for two years from the date of the offense.)

ADOPTED, APRIL 26, 1975

Resolution A-4-75

Subject: HOUSESTAFF SECTION

Chapter II — Membership, Section 3(A) and

Chapter VIII — House of Delegates, Sections 1, 2 and 3

RESOLVED, That Chapter II, Section 3(A) be amended to read:

(A) Active Members

All active members of all the county societies shall be active members of this Association. The minimum qualifications for active membership (other than for interns and residents) in a county society shall be that the individual must (1) hold the degree of doctor of medicine or its equivalent or doctor of osteopathy, (2) be an American citizen, or have made application for American citizenship papers (in which case, he must make reasonable progress toward full citizenship or his membership shall lapse), (3) hold an unrevoked license to practice medicine and surgery or osteopathic medicine and surgery in the State of Arizona, (4) be a legal resident of the State of Arizona, (5) fulfill the continuing medical education requirements of the Arizona Medical Association. Subject to these minimum qualifications and to the provisions for loss of membership (Chapter II, Section 4), each county society shall be the exclusive judge of the qualifications of its members.

Interns and residents who are licensed or registered with the Board of Medical Examiners, State of Arizona, are eligible for active membership in a county society. THESE MEMBERS SHALL CONSTITUTE THE MEMBERSHIP OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION.

Rights. An active member shall have all the rights and privileges of the Association as herein provided. Intern and resident active members shall pay ten percent of the dues of other active members and will be exempted from special assessments.

RESOLVED, That Chapter VIII, Sections 1, 2 and 3 be amended to read:

Section 1. Composition of House; Meetings: — The House shall constitute the voting body of the Association and shall be composed of the elected Delegates of the county societies, elected delegates of each duly constituted chapter of the Student American Medical Association in Arizona, ELECTED DELEGATES OF THE DULY CONSTITUTED CHAPTER OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and the members of the Board. Delegates who are thereafter elected as officers do not by such election lose their status as voting Delegates in the House. The past presidents of the Association shall be ex-officio members of the House of Delegates without the right to vote.

The House shall meet at least once a year at the time of the Annual Meeting. In addition, special meetings of the House may be held at any time, upon at least six weeks notice thereof to the Delegates, at the call of the Board, or upon the call of twenty Delegates representing at least eight county societies.

Section 2. Number of Delegates: — Each county society shall be entitled to representation in the House by two Delegates, or their alternates, for the first twenty active members or fraction thereof, and one additional Delegate for each additional twenty active members or major fraction thereof, as determined on October first preceding the Annual Meeting.

Each duly constituted chapter of the ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION AND EACH DULY CONSTITUTED CHAPTER OF THE Student American Medical Association in Arizona shall EACH be entitled to representation in the House by two Delegates or their alternates.

Section 3. Election of Delegates; List Thereof: — Sufficiently in advance of the Annual Meeting each county society, THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and each duly constituted chapter of the Student American Medical Association in Arizona shall elect Delegates and an equal number of alternates to represent it in the House. In the absence of any Delegate, his alternate may vote in his name on any question before the House. No alternate shall be eligible for election to office, but he may be appointed to membership on House committees in the absence of the Delegate. The secretary of each county society and OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION and each chapter of the Student American Medical Association shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting. Representation in the House shall be contingent upon compliance with this provision. A member to be seated must present evidence at the time of his appearance at the House, of his official election by his county society OR THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, and each duly constituted chapter of the Student American Medical Association in Arizona shall elect Delegates and an equal number of alternates to represent it in the House. In the absence of any Delegate, his alternate may vote in his name on any question before the House. No alternate shall be eligible for election to office, but he may be appointed to membership on House committees in the absence of the Delegate. The secretary of each county society and OF THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION and each chapter of the Student American Medical Association shall send the list of such elected Delegates and alternates to the Secretary of the Association not later than two months before the Annual Meeting. Representation in the House shall be contingent upon compliance with this provision.A member to be seated must present evidence at the time of his appearance at the House, of his official election by his county society OR THE ARIZONA MEDICAL ASSOCIATION HOUSESTAFF SECTION, or chapter of the Student American Medical Association.

ADOPTED, APRIL 26, 1975

THE HOUSE OF DELEGATES ADOPTED A RECOMMENDATION FROM THE REFERENCE COMMITTEE ON AMENDMENTS TO REFER TO THE BOARD OF DIRECTORS FOR THEIR CONSIDERATION A REQUEST BY THE HOUSESTAFF THAT THE ARIZONA HOUSESTAFF SECTION BE DESIGNATED AS A COMPONENT ORGANIZATION OF THE ARIZONA MEDICAL ASSOCIATION.

Resolution A-5-75

Subject: BOARD OF DIRECTORS — AMA BOARD OF TRUSTEES

Chapter VI — Board of Directors, Section 1

RESOLVED, That Chapter VI, Section 1 be amended to read:

Section 1. Members: — The Board shall be composed of the officers of the Association, AND ANY MEMBER OF THE ARIZONA MEDICAL ASSOCIATION WHO IS AN OFFICER OR TRUSTEE OF THE AMERICAN MEDICAL ASSOCIATION.

ADOPTED, APRIL 26, 1975

Resolution A-6-75

Subject: ELECTION OF OFFICERS AND MEMBERS OF THE BOARD

Chapter V, Section 1. General; Qualifications: And Section 5. Nominations

RESOLVED, That Chapter V — Elections of Officers and Members of the Board — Section 1. General; Qualifications: — be amended to read:

Section 1. General; Qualifications: — All elections for officers shall be conducted as a part of the business of the regular annual meeting of the House; shall be made by secret written ballot, and the candidate receiving a majority vote for a particular office shall be elected to that office. If no one of three or more candidates for a particular office shall receive a majority of the votes cast, the two with the highest number of votes shall be the candidates in a run-off election. If there are two candidates only and the vote is a tie, there shall be a run-off election. No person shall be eligible for election to office or to the Board who has not been a member of the Association for the preceding three years, and who was not a Delegate or Director at the time of his election. All officers and members of the Board shall serve until their successors are elected and have accepted the office. And be it futher

RESOLVED, That Chapter V — Election of Officers and Members of the Board — Section 5. Nominations — be added to read:

NOMINATIONS MADE FROM THE FLOOR FOR THE OFFICE OF DISTRICT DIRECTOR MAY BE MADE ONLY BY DELEGATES FROM THE COUNTIES IN THEIR RESPECTIVE DISTRICTS.

ADOPTED, AS AMENDED, APRIL 26, 1975

Resolution A-7-75

Subject: MANDATORY MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

WHEREAS, The complexity of the medical care delivery mechanism often places individual private practitioners at idealogical odds with local or national medical organizations; and

WHEREAS, Mandatory membership in both local and national medical organizations is contrary to the right of freedom of choice for the individual physician; and

WHEREAS, Mandatory membership in both local and national medical organizations obligates an individual physician to make financial contributions to an organization which may use those funds for purposes that are contrary to the philosophical beliefs of the individual contributor; therefore be it

RESOLVED, That the Arizona Medical Association make the following amendments to its bylaws:

CHAPTER II — Membership

Section 1. General Requirements, be amended to read:

An active member in good standing of a county society is automatically an active member of this Association, and, conversely, an active member in good standing of this Association must be an active member of a county society.

Any person, when he becomes a member, shall agree to abide by the Articles of Incorporation and Bylaws of this Association, and by any lawful changes which from time to time may be made. He further agrees to abide by the Code of Ethics as laid down by the American Medical Association as it now exists, or may hereafter be amended, (*and, be a member of that association.)*

Section 4. Loss of Membership, be amended to read:

(A) Active, Associate or Fifty-Year Club membership in this Association shall be lost by:

(i) Final expulsion from the county society through which he is an active member of the Association.

(ii)Transfer of membership to a county society of another state, and thereby to another state association, except as provided in Chapter III, Section 3.

(iii) Voluntary resignation, which shall be without prejudice.

(iv) Action of the House of Delegates (see Chapter VI, Section 6; Chapter VIII, Section 9).

(v) Revocation of the member's license to practice in Arizona. This latter clause shall effect immediate loss of membership as of the date of revocation.

(vi) Termination of Board of Medical Examiners registration of intern or resident active member. This latter clause shall take effect at the end of the calendar year.

(*(vii) Failure to maintain membership in good standing in the American Medical Association.)*

(vii) Failure to pay Association dues and assessments within one year of the date such became payable, unless such failure be exempted under Chapter IX, Section 5.

(viii) For active membership, failure to fulfill the continuing medical education requirements of the Arizona Medical Association elsewhere in the bylaws.

(B) Active, Associate or Fifty-Year Club membership in this Association shall be suspended by:

(i) Suspension of membership in the county society through which he is an active member of the Association.

(ii) Action of the Board (see Chapter VI, Section 6).

((iii) Suspension of membership in the American Medical Association, or)

(iii) Failure to pay the annual dues and assessments before the delinquency date.

(iv) For active membership, failure to submit satisfactory reports showing compliance with the continuing medical education requirements of the Arizona Medical Association.

All of the rights and privileges of membership shall be withheld during the period of suspension of membership.

(C) Service, honorary, student, and affiliate membership in this Association may be withdrawn upon a majority vote of the House after recommendation of the Board.

(D) The county society involved, and the Association, shall each notify the other of any change of status under these provisions for loss or suspension of membership.

(E) Any physician who may feel aggrieved by action of the society of the county in which he resides in refusing him membership, or in suspending, censuring, or expelling him, shall have the right to appeal to the Board, and IF HE OR SHE IS A MEMBER OF THE AMERICAN MEDICAL ASSOCIATION AND, if he so desires, further to the Judicial Council of the American Medical Association. Any physician suspended, or censured, by the Board, or expelled by action of the House, or any county society, which is a party to such appeal to the Board may appeal such of these decisions, as the Judicial Council of the American Medical Association will accept, to the Judicial Council for review. In this event, the decision of the Judicial Council will be final. In the event the Judicial Council refuses to consider such an appeal, the decision of the Board, or the House, as the case may be, shall be final. In hearing appeals, the Board may admit such oral or written evidence as in its judgment will most fairly present the facts, but in the case of every appeal the Board as a Board and as individuals shall first make effort at conciliation and compromise.

CHAPTER V — Election of Officers and Members of the Board

Section 3. Terms of Office; Qualifications, be amended to read:

The following officers shall be elected for a one year term: the President-Elect, Vice President, Secretary, Treasurer, Speaker of the House, and Editor-in-Chief. The President and Past-President, though not elected as such, also have a one year term.

The Delegate(s) and Alternate Delegate(s) to the American Medical Association shall be elected in accordance with the Bylaws of the American Medical Association. If the Association is entitled to more than one Delegate, not all terms shall run concurrently. ANY NOMINEE FOR DELEGATE(S) OR ALTERNATE DELEGATE(S) TO THE AMERICAN MEDICAL ASSOCIATION SHALL ALSO BE A MEMBER OF THE AMERICAN MEDICAL ASSOCIATION.

District Directors shall be elected for a term of three years.

CHAPTER IX — Dues and Assessments

Section 1. Fixing of Annual Dues; Payments; Reinstatements; Collections; Enforcement; be amended to read:

(a) The amount of annual dues shall be determined by the House at the Annual Meeting and shall include a subscription to the Journal. Any proposal to increase the annual dues shall be submitted to the Delegates at least six weeks prior to the Annual Meeting.

(b) The annual dues and the dues and assessments of the American Medical Association shall be payable January first of the year for which levied and shall be delinquent after February fifteenth of that year. The secretary of each county society shall collect and forward to the Association Secretary, the dues for its members, together with the dues and assessments levied by the American Medical Association, FOR THOSE PHYSICIANS WHO ARE ITS MEMBERS.

(c) Any member whose dues for the current year, or whose dues and assessments for the American Medical Association, have not been remitted to the Association Secretary on or before February fifteenth, shall stand suspended until such delinquency is corrected.

NOT ADOPTED, APRIL 26, 1975

The Reference Committee on Amendments considered Resolutions 5-75 and 8-75 pertaining to Bylaw amendments as follows.

Resoluton 5-75

Subject: OPTIONAL AMERICAN MEDICAL ASSOCIATION MEMBERSHIP

WHEREAS, Only six states now are unified regarding American Medical Association and state membership; and

WHEREAS, The American Medical Association no longer represents the thinking of the majority of practicing physicians; and

WHEREAS, Many physicians feel the American Medical Association image has been damaging to them as individuals; therefore be it

RESOLVED, That the Arizona Medical Association go on record as favoring optional American Medical Association membership for Arizona Medical Association members.

NOT ADOPTED, APRIL 26, 1975

Resolution 8-75

Subject: UNIFIED MEMBERSHIP

WHEREAS, The American Medical Association is the largest national medical association; and

WHEREAS, There have been constant and continuing efforts to "divide and conquer" the members of the American Medical Association; and

WHEREAS, Only with a strong American Medical Association, working with other allied professional associations or academies can we influence, change or create national legislation affecting the delivery of medical care, type of care and its ultimate cost; therefore be it

RESOLVED, That the Arizona Medical Association again go on record as favoring the concept of Unified Membership.

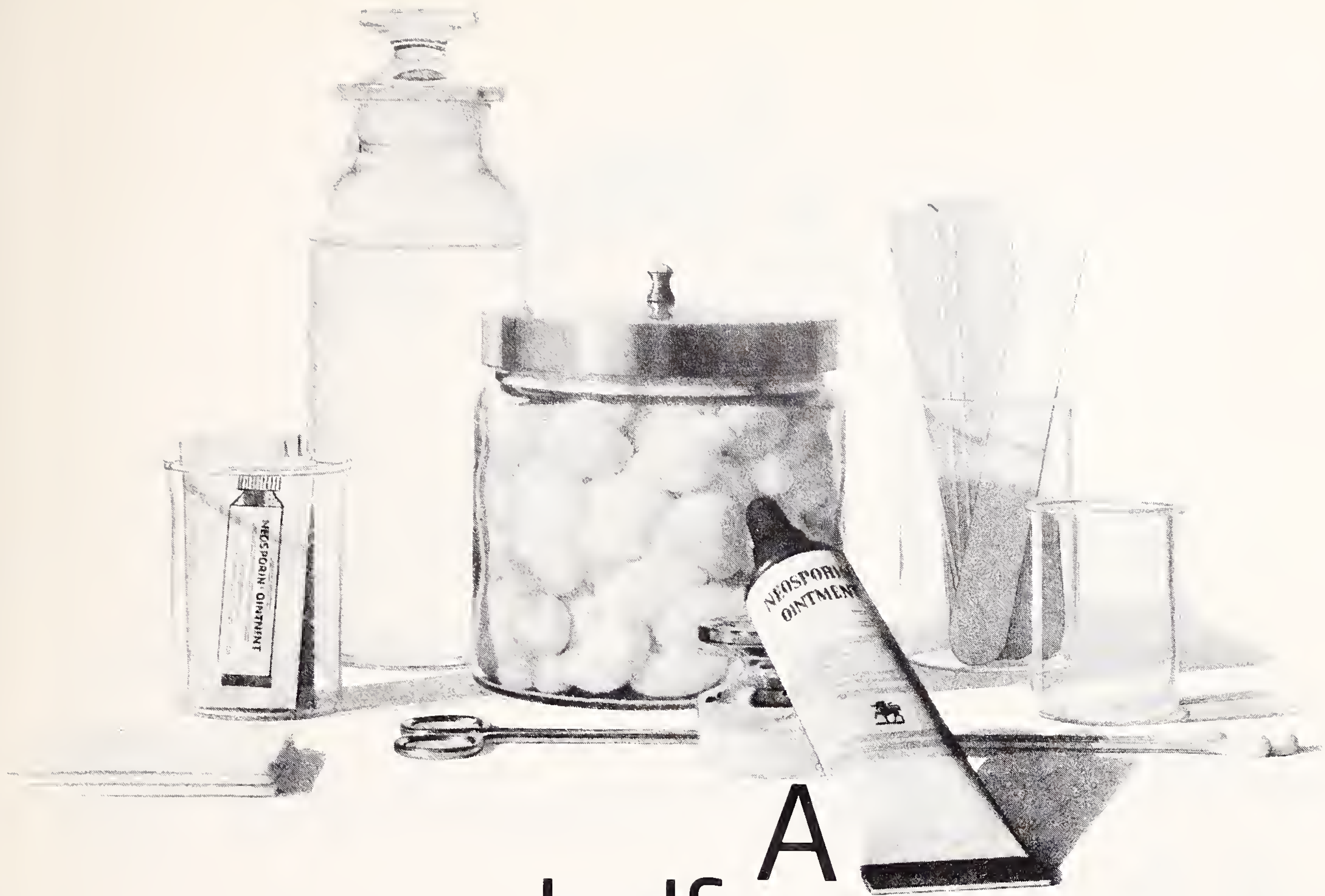
ADOPTED , APRIL 26, 1975

Meeting adjourned Sine Die at 12:51 p.m.

William E. Crisp, M.D.
Secretary

by

Burce E. Robinson
Executive Director



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Prophylactically, the ointment may be used to prevent bacterial contamination in burns, skin grafts, incisions, and other clean lesions. For abrasions, minor cuts and wounds accidentally incurred, its use may prevent the development of infection and permit wound healing.

CONTRAINDICATIONS: Not for use in the eyes or external ear canal if the eardrum is perforated. This product is contraindicated in those individuals who have shown hypersensitivity to any of the components.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

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TUCSON HOSPITALS MEDICAL EDUCATION PROGRAM, TUCSON
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GLENDALE SAMARITAN HOSPITAL

7 A.M. Second Tuesday Each Month
Conference room

July 8 — Ominous Hematuria

Sept. 9 — Renal Failure — Indications for Dialysis

Oct. 14 — Current Treatment of Congestive Heart Failure

Nov. 11 — Evaluation of the Patient with Peripheral Vascular Disease

Dec. 9 — Current Concepts in Anesthesia

SPONSOR: Glendale Samaritan Hospital

CONTACT:
Antonio Toraya, M.D., FACS
4550 N. 51st Ave.
Phoenix, AZ 85031

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

COCONINO COUNTY MEDICAL SOCIETY SUMMER MEDICAL SEMINAR

July 26-27, 1975

SPONSOR: Coconino County Medical Society

CONTACT:
Merrill M. Abeshaus, M.D.
1355 N. Beaver St.
Flagstaff, AZ 86001

Approved for 8 required hours toward the ArMA Certificate in Continuing Medical Education.

RUIDOSO SUMMER CLINIC

Inn of the Mountain Gods
Ruidoso, New Mexico
July 14-17, 1975

SPONSOR: University of New Mexico School of Medicine

CONTACT:
Bob Reid, Conv. Dir.
610 Electric Bldg.
El Paso, Texas 79901

Approved for 16 required hours toward the ArMA Certificate in Continuing Medical Education.

PHYSICIANS TRAINING PROGRAM AS PART OF ARTHRITIS SERVICES PROGRAM

July 1, 1974 - June 30, 1975
Arizona Medical Center, Tucson, AZ

SPONSOR: Arizona Medical Center and Arthritis Services Program

CONTACT:
Beth Ziebell
3813 E. 2nd St.
Tucson, AZ

Approved for 40 required hours toward the ArMA Certificate in Continuing Medical Education.

DEPRESSION A PRACTICAL APPROACH

September 18, 1975
Little American Motel, Flagstaff, AZ

SPONSOR: Coconino County Medical Society
CONTACT:
Joseph N. Reno, M.D.
120 West Fine Ave.
Flagstaff, AZ

Approved for 4 required hours toward the ArMA Certificate in Continuing Medical Education.

PSYCHIATRIC GRAND ROUNDS

Every Wed., Sept. to May, 4 p.m. to 5:30 p.m.
Arizona Medical Center, Tucson, AZ., Rm. 8403

SPONSOR: Department of Psychiatry, U of A College of Medicine

CONTACT: Roy N. Killingsworth, M.D.
Dept. of Psychiatry
Arizona Medical Center
Tucson, AZ 85724

Approved for 1½ hours per session toward the ArMA Certificate in Continuing Medical Education.

MONTHLY MEETING OF TUCSON RADIOLOGISTS

Last Tues. of Month
Plaza International, Tucson, AZ

SPONSOR: U of A Medical Center, Dept. of Radiology

CONTACT: Irwin M. Freundlich, M.D.
Arizona Medical Center
Dept. of Radiology
Tucson, AZ 85724

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

GRAND ROUNDS MEDICAL & SURGICAL

Each Thursday 7 a.m.-8 a.m.
St. Mary's Hospital, Trek Room, Tucson, AZ

SPONSOR: Departments of Medicine, Family Practice, and Surgery

CONTACT: Jack D. Nestor, M.D.
Clinical Laboratory
1601 W. St. Mary's Rd.
Tucson, AZ 85703

Approved for 1 required hour per round toward the ArMA Certificate in Continuing Medical Education.

REVIEW COURSE IN INTERNAL MEDICINE

Weekly on Wednesdays, 5 p.m.-6:30 p.m.
at participating Hospitals listed below
February 5 - June 4, 1975

SPONSOR: Departments of Medicine, Good Samaritan Hospital, Maricopa County General Hospital and St. Joseph's Hospital

CONTACT: D. J. Crosby, M.D.
Good Samaritan Hospital
1033 E. McDowell Road
Phoenix, AZ 85006

Approved for 1½ required hours toward the ArMA Certificate in Continuing Medical Education.

BI-MONTHLY MEDICAL EDUCATION SEMINAR

Every other Wed. AM
Begin 7/3/74

Maryvale Samaritan Hospital, Phoenix, AZ

SPONSOR: Medical Staff Maryvale Hospital

CONTACT:
Thomas J. Groves, M.D.
6037 W. Elm St.
Phoenix, AZ 85033

Approved for 1 required hour per session toward the ArMA Certificate in Continuiing Medical Education.

CAMELBACK HOSPITAL CLINICAL CONFERENCE

3rd Tuesday monthly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per session toward the ArMA Certificate in Continuing Medical Education.

PATIENT STAFFING CONFERENCE

Three times weekly
Camelback Hospital, Phoenix, AZ

SPONSOR: Camelback Hospital

CONTACT:
Stuart M. Gould, Jr., M.D.
Medical Director
Camelback Hospital
5055 N. 34th St.
Phoenix, AZ 85018

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MORBIDITY & MORTALITY CONFERENCE

2nd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL PATHOLOGICAL CONFERENCE

4th Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Director of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

MEDICAL GRAND ROUNDS

3rd Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

FAMILY PRACTICE CONFERENCE

1st Monday, Monthly, 12:45 p.m.
Scottsdale Memorial Hospital, Scottsdale, AZ

SPONSOR: Medical Staff

CONTACT:
R. C. Good, M.D.
Dir. of Medical Education
7300 E. 4th St.
Scottsdale, AZ

Approved for 1 elective hour per conference toward the ArMA Certificate in Continuing Medical Education.

CLINICAL CANCER CONFERENCE

3rd Wednesday Every Month
Butler Bldg. Conference Room
Good Samaritan Hospital, Phoenix, AZ

SPONSOR: Good Samaritan Hospital

CONTACT:
John A. Bruner, M.D.
926 E. McDowell Road
Phoenix, AZ 85006

Approved for 1 required hour per session toward the ArMA Certificate in Continuing Medical Education.

SURGICAL GRAND ROUNDS
4TH TUESDAY OF EACH MONTH

Hospital Auditorium
Baptist Hospital, Phoenix

SPONSOR: Baptist Hospital Phoenix

CONTACT:
James B. Shields, M.D.
6036 N. 19th Ave.
Phoenix, AZ 85015

Approved for 1½ required hours per month toward the ArMA Certificate in Continuing Medical Education.

CARDIOLOGY CONFERENCE

Weekly — Friday 8-9 a.m.
St Mary's Hospital Auditorium
Tucson, AZ

SPONSOR: St. Mary's Hospital

CONTACT:
A. L. Forte, M.D.
St. Mary's Hospital
Tucson, AZ 85724

Approved for one required hour toward the ArMA Certificate in Continuing Medical Education.

PROBLEM CASE WORKSHOPS

3rd Monday of each month 7:30 a.m.
Room 4410, Arizona Medical Center, Tucson, AZ

SPONSOR: Division of Ophthalmology, U of A
College of Medicine

CONTACT:
H. E. Cross, M.D., Ph.D.
Arizona Medical Center
Dept. of Surgery
Tucson, AZ

Approved for 2 required hours toward the ArMA Certificate in Continuing Medical Education.

Directory

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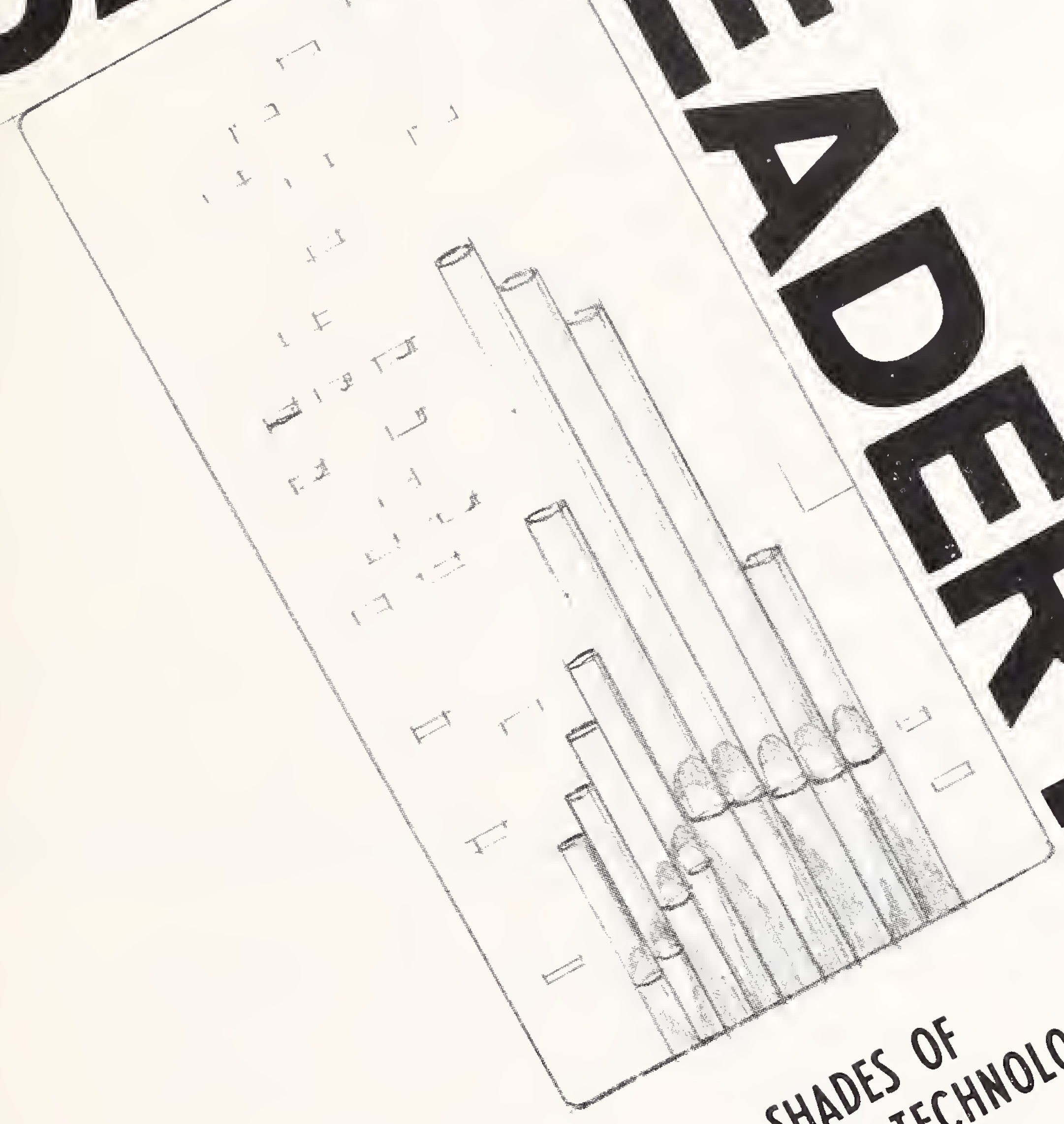

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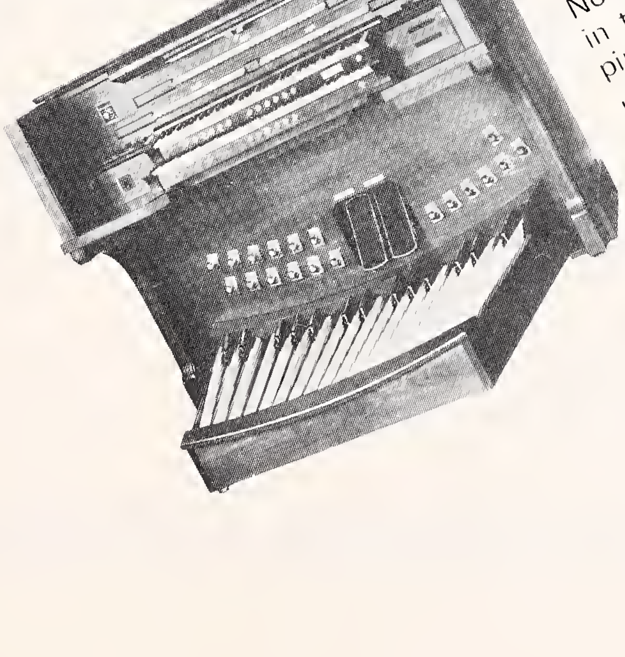

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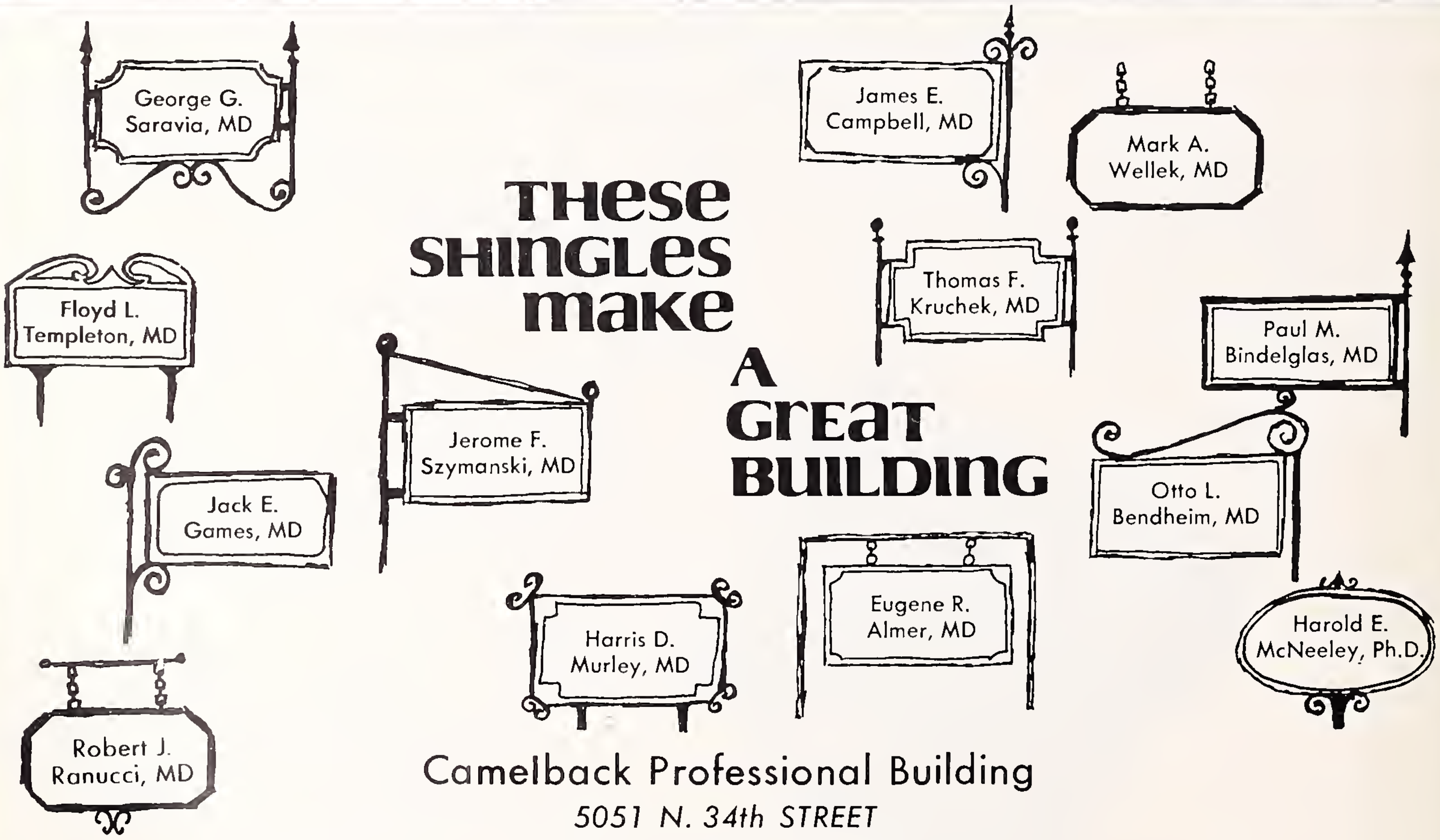

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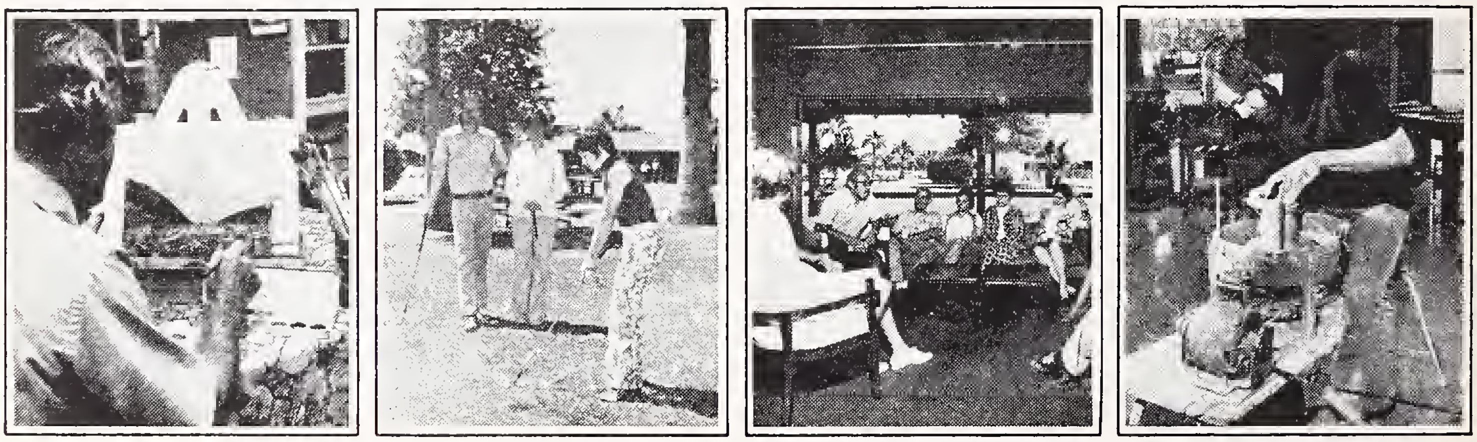

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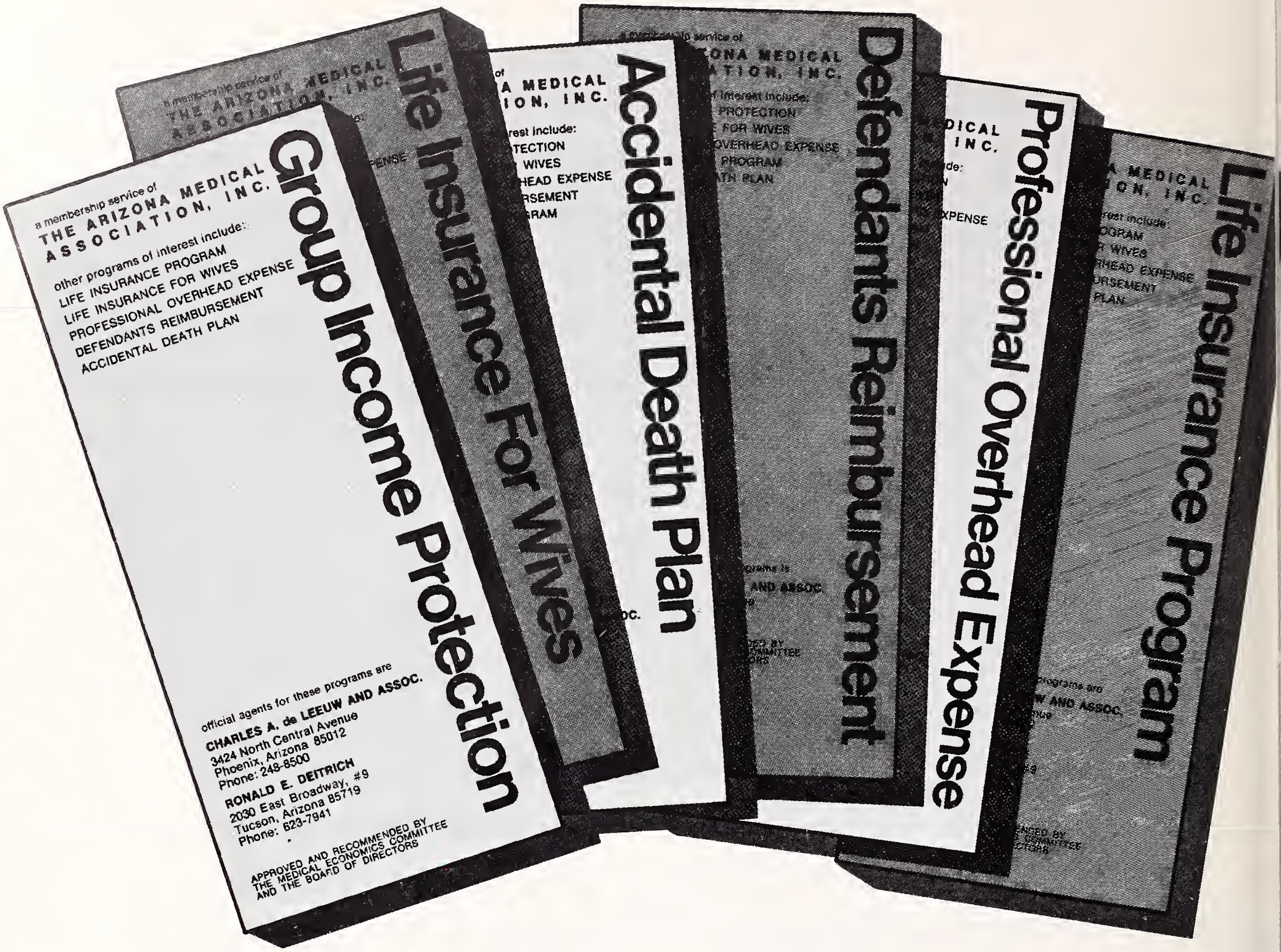

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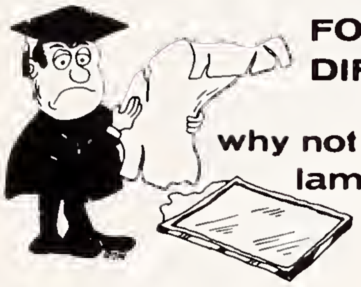

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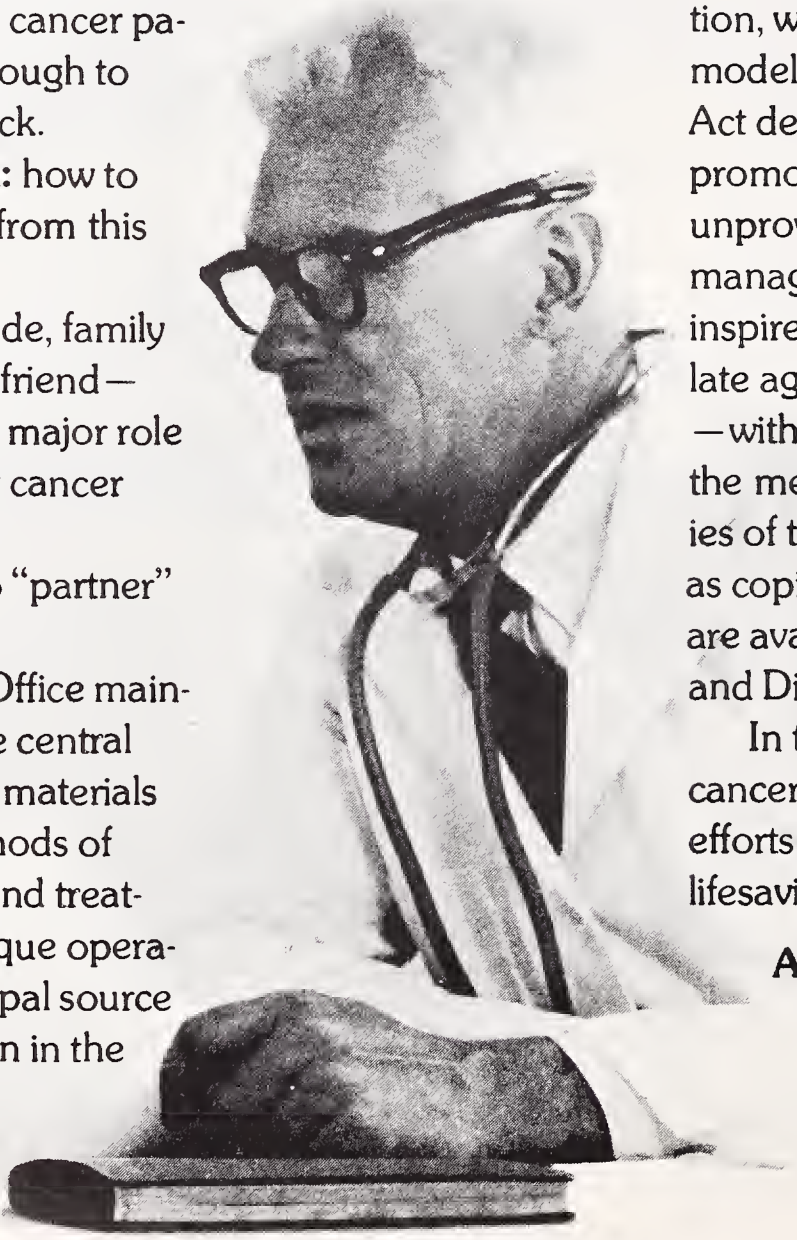
American Cancer Society



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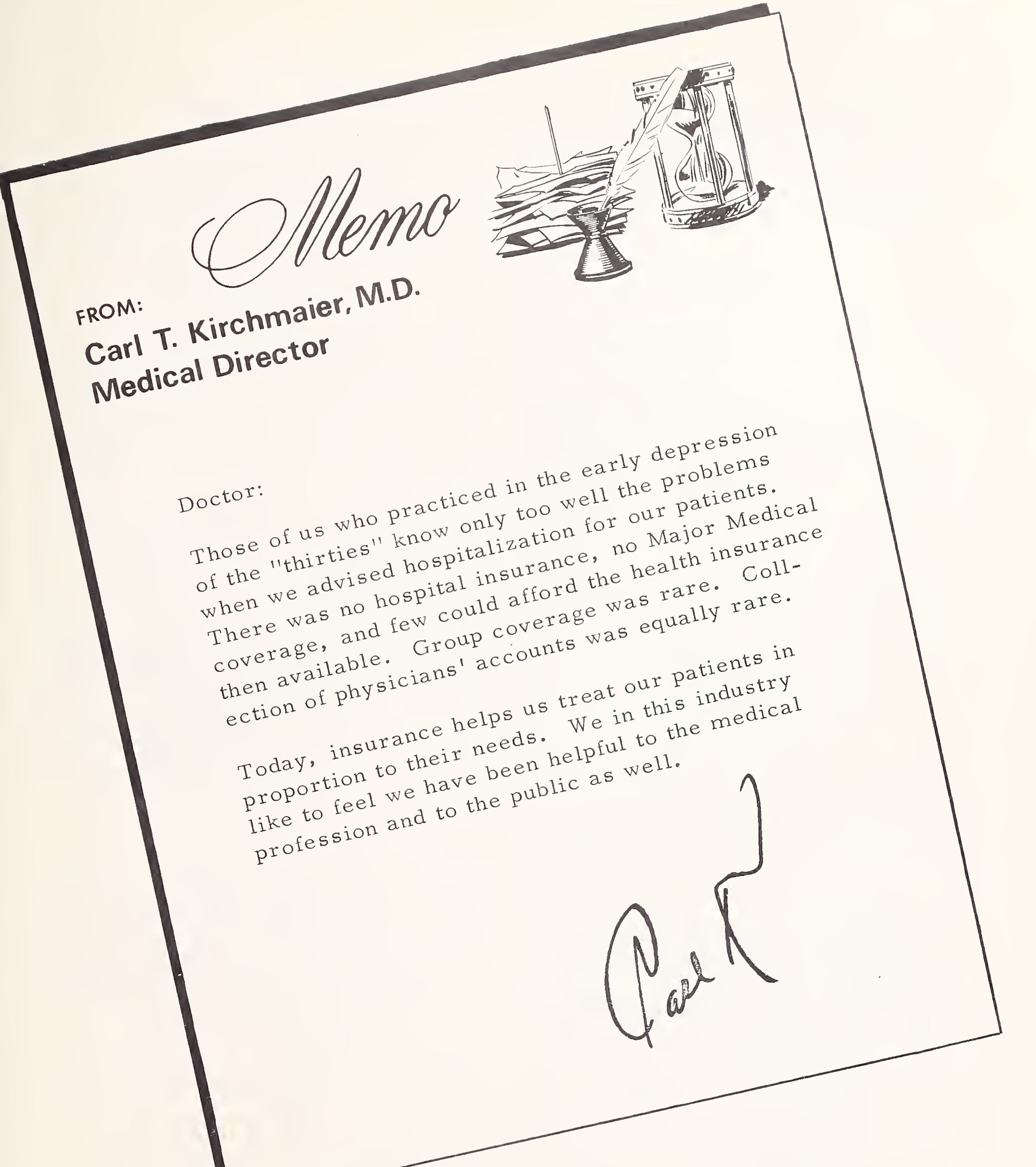

Memo

FROM:

Carl T. Kirchmaier, M.D.
Medical Director

Doctor:

Those of us who practiced in the early depression of the "thirties" know only too well the problems when we advised hospitalization for our patients. There was no hospital insurance, no Major Medical coverage, and few could afford the health insurance then available. Group coverage was rare. Collection of physicians' accounts was equally rare.

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